



ClearSpan™ RV and Boat Storage Buildings



Photo may show a different but similar model.

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WARNING: Cancer and Reproductive Toxicity - P65Warnings.ca.gov

Revision date: 11.01.10

STK#	DIMENSIONS
105596	14' W x 16' H x 32' L
105597	14' W x 16' H x 36' L
105598	14' W x 16' H x 40' L
105599	14' W x 16' H x 44' L



YOU MUST READ THIS DOCUMENT BEFORE YOU BEGIN TO ASSEMBLE THE SHELTER.

Thank you for purchasing this ClearSpan™ shelter. When properly assembled and maintained, this product will provide years of reliable service. These instructions include helpful hints and important information needed to safely assemble and properly maintain the shelter. Please read these instructions **before** you begin.

If you have any questions during the assembly, contact Customer Service for assistance.

SAFETY PRECAUTIONS

- Wear eye protection.
- Wear head protection.
- Wear gloves when handling metal tubes.
- Use a portable GFCI (Ground Fault Circuit Interrupter) when working with power tools and cords.
- Do not climb on the shelter or framing during or after construction.
- Do not occupy the shelter during high winds, tornadoes, or hurricanes.
- Provide adequate ventilation if the structure is enclosed.
- Do not store hazardous materials in the shelter.
- Provide proper ingress and egress to prevent entrapment.

ANCHORING INSTRUCTIONS

Prior to assembling this shelter, please read the anchoring precautions and instructions included with the kit. Anchoring instructions are included in the **MUST READ** document. *You must anchor the building after the frame is assembled and before the cover is installed.*

⚠ WARNING: The anchor assembly is an integral part of the shelter construction. Improper anchoring may cause shelter instability and failure of the structure. Failing to anchor the shelter properly *will void the manufacturer's warranty* and may cause serious injury and damage.

LOCATION

Choosing the proper location is an important step before you begin to assemble the structure.

The following suggestions and precautions will help you determine whether your selected location is the best location.

- Never erect the structure under power lines.
- Identify whether underground cables and pipes are present *before* preparing the site or anchoring the structure.
- Location should be away from structures that could cause snow to drift on or around the building.
- Do not position the shelter where large loads such as snow and ice, large tree branches, or other overhead obstacles could fall.

SITE

After choosing a location, proper preparation of the site is essential. The following site characteristics will help ensure the integrity of the structure.

- The support structure must be level to properly and safely erect and anchor the frame.
- If the site is not level, use footing to provide a secure base for the structure. Pre-cast concrete blocks, pressure-treated wood posts, or poured footings are all acceptable when properly used.
- Drainage: Water draining off the structure and from areas surrounding the site should drain away from the site to prevent damage to the site, the structure, and contents of the structure.

⚠ WARNING: The individuals assembling this structure are responsible for designing and furnishing all temporary bracing, shoring and support needed during the assembly process. For safety reasons, those who are not familiar with recognized construction methods and techniques *must seek the help of a qualified contractor.*

ASSEMBLY PROCEDURE

Following the instructions as presented will help ensure the proper assembly of your shelter. Failing to follow these steps may result in an improperly assembled and anchored shelter and will void all warranty and protection the owner is entitled to.

The steps outlining the assembly process are as follows:

1. Verify that all parts are included in the shipment. Notify Customer Service for questions or concerns.
 2. Read these instructions, the Must Read document, and all additional documentation included with the shipment **before** you begin assembling the shelter.
 3. Gather the tools, bracing, ladders (and lifts), and assistants needed to assemble the shelter.
 4. Check the weather **before** you install the roof cover and any panels (if equipped). Do not install covers or panels on a windy or stormy day.
 5. Re-evaluate the location and site based on the information and precautions presented in the documentation included with the shipment.
 6. Lay out the site (if this has not been completed).
 7. Assemble the frame components in the order they are presented in these instructions.
 8. Assemble the frame including the bracing (if equipped).
 9. Consult the Must Read document for anchoring comments and instructions.
 10. Install, tighten, and secure the end panel (if equipped) and main cover. This applies to fabric covers that stretch over the frame assembly.
 11. Read the care and maintenance information at the end of these instructions.
 12. Complete and return all warranty information as instructed.
- **Chord:** The assembly of pipes that spans from one rafter leg to the other (on the same rafter assembly). For strength, brackets are used to attach struts between the chord and the rafter.
 - **Conduit:** An assembly of pipes used to secure the main cover and end panels (if equipped). Purlins and some strut assemblies also consist of connected pipes to form a conduit. Each pipe joint of a conduit assembly is secured with a self-tapping Tek screw.
 - **Coupler or Fitting:** A part of the frame assembly where legs, purlins and rafter pipes are inserted and secured. In most instances, 3-way and 4-way couplers are used. In some larger applications, couplers are used to secure the joints of the different rafter sections during the assembly of the rafters. Some shelters do not use couplers.
 - **Foot, Rafter Foot, or Base Plate:** The part attached to and found at the base of the rafter or leg of the shelter. Depending on the shelter, the foot is an optional purchase. Some shelters do not offer an optional foot. Some use 1-way connectors; others use ground posts.
 - **Must Read Document:** This document includes building and shelter anchoring instructions, steps for end wall reinforcement, safety precautions, and notices and warnings. The Must Read document is sent with all shelters and buildings. If you did not receive a Must Read document, contact Customer Service to request one.
 - **On-Center:** Term used to describe a measurement taken from the vertical center of the rafter or frame member to the vertical center of another.
 - **Purlin or Angled (or Lateral) Bracing:** The pipe assemblies that run perpendicular to the rafters or framework that supports the main cover. These assemblies are found on the sides and roof areas of the assembled frame, are evenly spaced, and typically run from the front to the back of the shelter.
 - **Plain or Straight Pipe:** A term used to describe a pipe that has the same diameter or width throughout its entire length.
 - **Strut:** A strut is usually a length of pipe with two flattened ends and is used for diagonal bracing of the shelter frame. A strut is typically secured to the frame work by special brackets, bolts, and/or clamps.
 - **Swaged End or Swaged Pipe:** The term "swaged" refers to the tapered end of the pipe or tube. Swaged ends of a pipe can be inserted into couplers and the straight ends of other pipes of the same diameter.
 - **Tek Screw:** A self-tapping fastener used to secure pipe joints and to fasten brackets to rafters.

LIST OF WORDS AND PHRASES

Before you begin, it is important to become familiar with the words and phrases used in this instruction manual.

These words and phrases are common to most ClearSpan™ shelters and identify the different parts of the shelter. (Some are used in this document. Others may not apply to this particular shelter.) These terms describe the shipped parts and can also be found on the materials list/spec sheets included with the shipment. To aid in the assembly, read through the following definitions before you begin to assemble your shelter.

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REQUIRED TOOLS

The following list identifies the main tools needed to assemble the shelter. Additional tools and supports may be needed depending on the structure, location, and application.

- Tape measure or measuring device
- Fine point marker to mark the location on tubing
- Variable speed drill and impact driver (cordless with extra batteries works best)
- Wrenches or ratchet and socket set (recommended)
- Adjustable pliers and self-locking pliers
- Scissors or utility knife to cut cover material and strap
- Tool to cut cable to the required length
- Hammers and gloves
- Ladders, work platforms, and other machinery for lifting designed to work safely at the height of the shelter
- Rope (or straps) for cover installation

UNPACK AND IDENTIFY PARTS

The following steps will ensure that you have all the necessary parts *before* you begin to assemble the shelter.

1. Unpack the contents of the shipment and place where you can easily inventory the parts. Refer to the Bill of Materials/Spec Sheets.
2. Verify that all parts listed on the Bill of Materials/Spec Sheets are present. If anything is missing or you have questions, consult the Pictorial Parts Guide and all shelter diagrams throughout these instructions for clarification, or contact Customer Service.

NOTE: At this time, you do not need to open the plastic bags containing the fasteners (if used).

QUICK START GUIDE

For a quick overview of this shelter and its components, consult the Quick Start Guide near the back of these instructions.

The pages of the Quick Start Guide show exploded views of all critical connections. Use the diagrams in the Quick Start section to assemble the frame of your building.

Consult the remainder of these instructions for important details that will help during the construction.

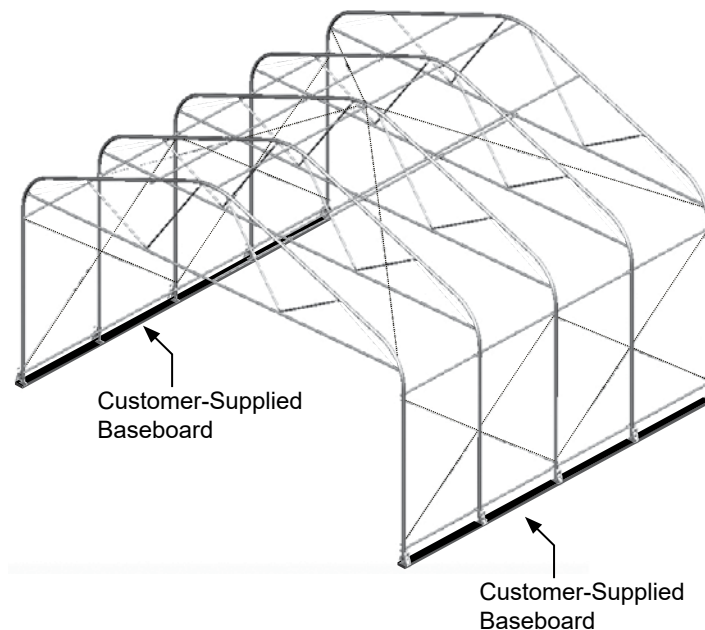
SPECIAL NOTE: Baseboards for Frame

Installing a baseboard under the rafter legs on each side of the frame is strongly recommended. The baseboard runs from the front to the back of the frame.

This baseboards and all connecting hardware are not included with the shipment and are *supplied by the customer* if used. Treated or recycled plastic lumber works well for a baseboard.

The baseboard, when installed properly, helps prevent the rafter legs from sinking into the ground once the frame is anchored. Baseboards also provide a surface to attach rafter feet if these are part of the frame components. Rafter feet can be purchased separately for most shelters.

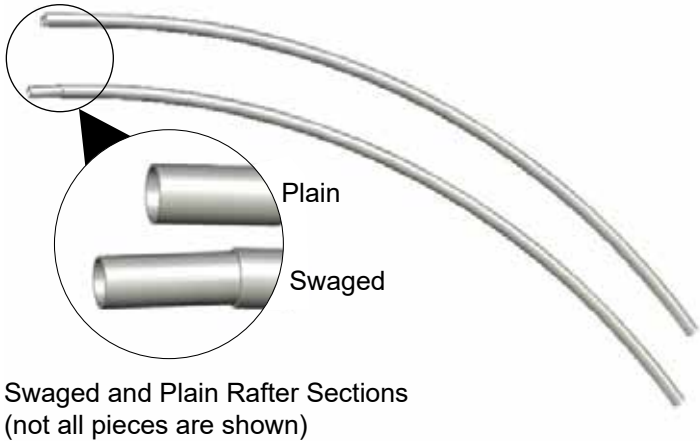
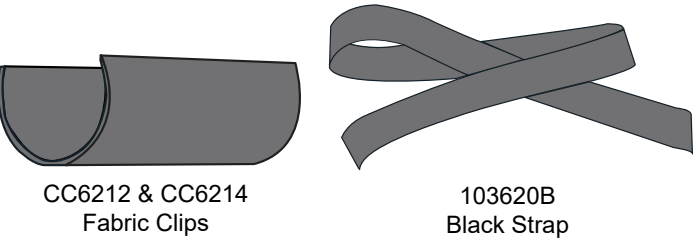
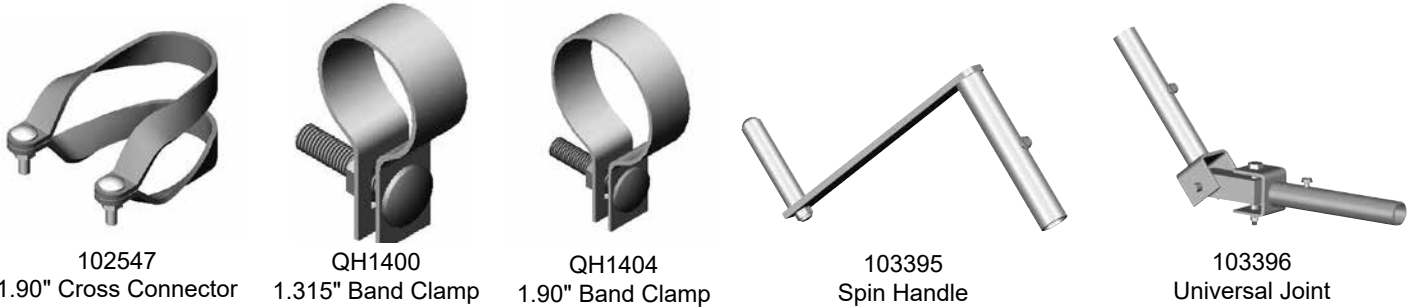
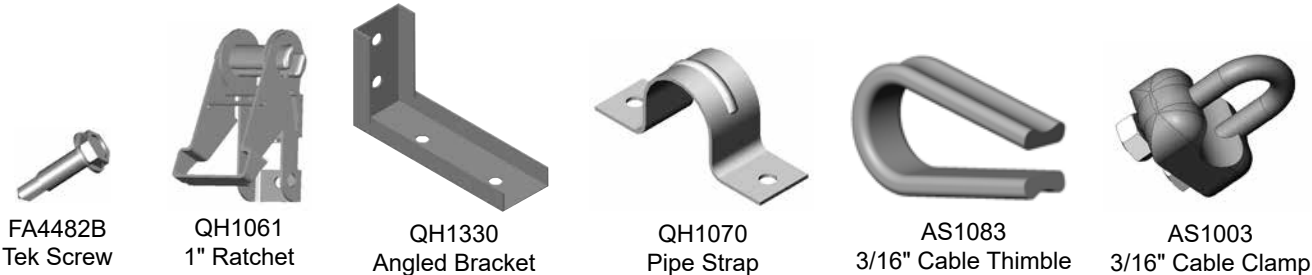
Consult these instructions, or contact Customer Service for additional information regarding baseboards and to purchase rafter feet for your shelter.



Frame shown above is used for illustration only. It shows where to position the baseboard if used. Actual frame may differ.

ClearSpan

The following graphics and photos will help you identify the different parts of the building. Consult the Quick Start Guide for additional details and diagrams. (All parts are not shown.)



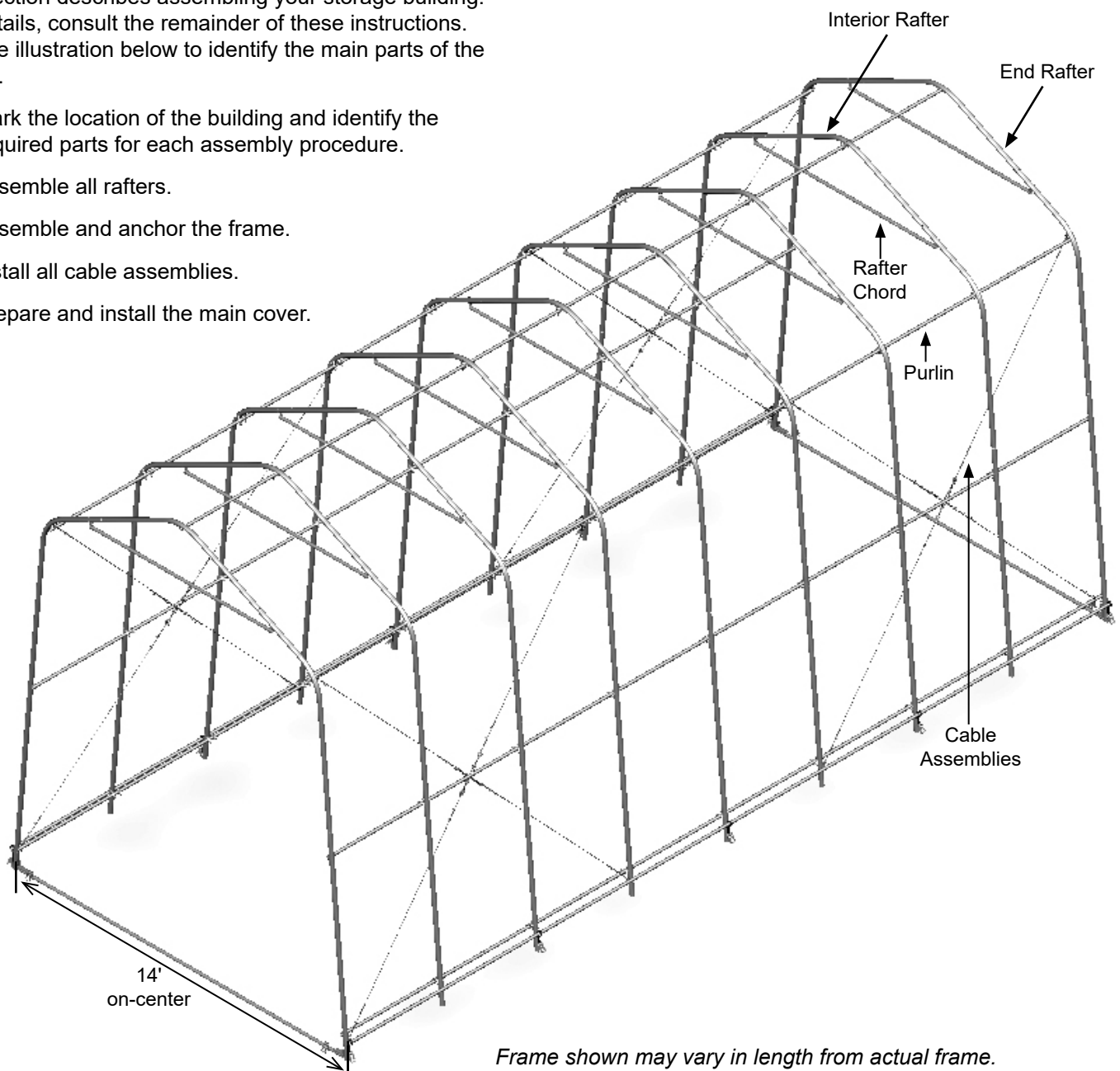


ClearSpan™ RV and Boat Storage Buildings

OVERVIEW

This section describes assembling your storage building. For details, consult the remainder of these instructions. See the illustration below to identify the main parts of the shelter.

1. Mark the location of the building and identify the required parts for each assembly procedure.
2. Assemble all rafters.
3. Assemble and anchor the frame.
4. Install all cable assemblies.
5. Prepare and install the main cover.



Frame shown may vary in length from actual frame.

LAY OUT THE BUILDING SITE

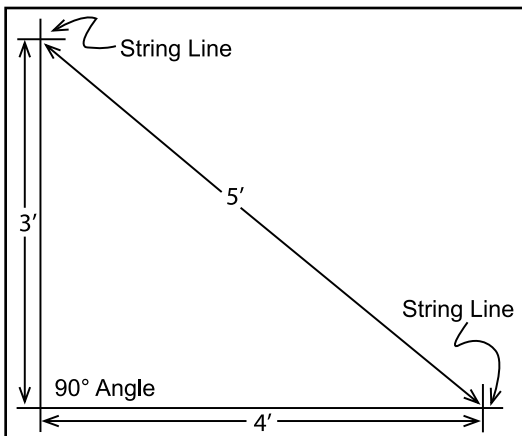
After the site is prepared, identify the location of the shelter corners helps to square the frame after it is assembled.

Taking these steps **before** assembling the shelter saves time and ensures that the structure is positioned as desired. The following procedure is a suggested method. Its use depends on the size of the shelter, shelter application, the footings, and the method used to anchor the shelter.

SQUARE THE SITE

1. Identify a corner where a building rafter will be positioned, drive in a stake, and string a line the exact width of the building and stake in place. (Width of the rafter is measured from center-to-center of the rafter legs.)
2. Sting a line at least as long as the building from the first stake at 90°.

NOTE: A transit can be used to ensure an accurate 90° angle, or the 3-4-5 rule can be used. Refer to diagram. Using multiples of 3-4-5 such as 6-8-10 or 12-16-20 helps to maintain an accurate 90° angle.



3. After squaring the position of the building and placing a stake at all corners, string a line between the stakes to mark the base of the building.

NOTE: If desired, a line can be painted on the ground using the strings between the stakes as guides.

4. Continue with the RAFTER AND FRAME ASSEMBLY procedures that follow.

ASSEMBLING THE RV AND BOAT STORAGE BUILDING COMPONENTS

NOTE: Assistance is required to assemble the shelter.

RAFTER ASSEMBLY

Gather the parts:

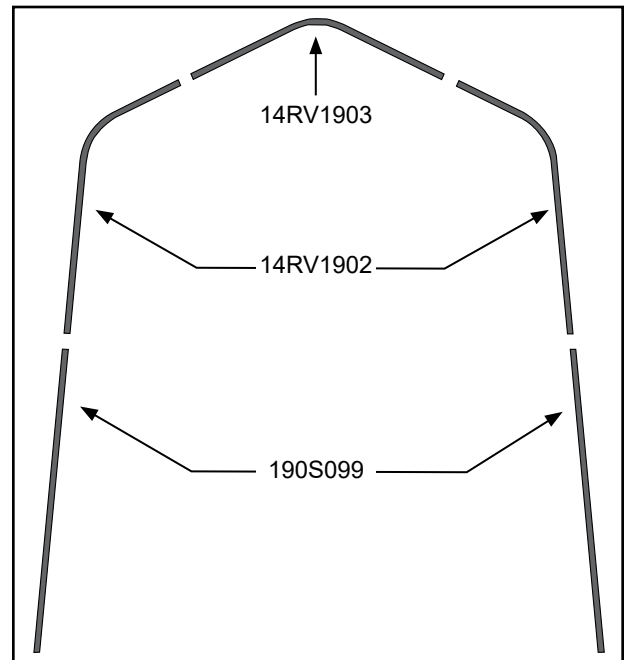
- Rafter pipe #14RV1903
- Rafter pipe #14RV1902
- Pipe 1.90" x 99" swaged
- Band clamps (#QH1404) and Tek screws
- Nut setter 3/8" x 2-9/16 magnetic

Rafter Assembly

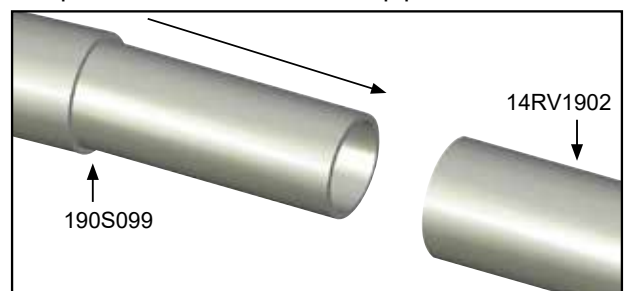
Each rafter assembly consists of five (5) rafter sections: 1 curved center pipe (for the top or peak), 2 leg pipes, and 2 curved pipes that connect the legs to the top center pipe.

Rafter Assembly Procedure

1. Select the five (5) pipes needed to assemble a rafter and arrange these on a flat surface as shown below for assembly.



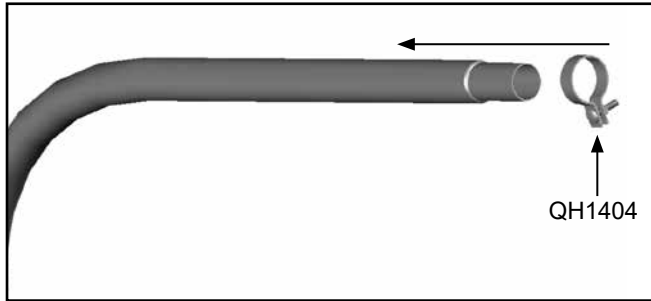
2. Slide the swaged portion of each straight leg pipe into the plain end of the 14RV1902 pipe.



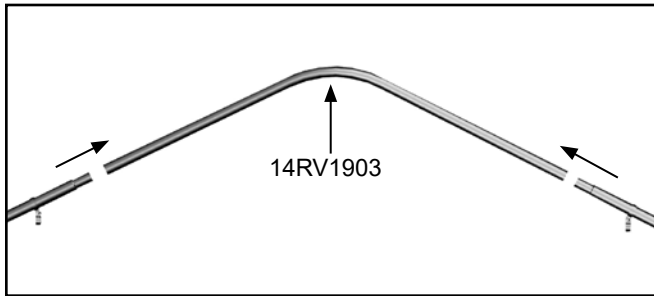
CLEARSPAN™ VALUE LINE

RAFTER ASSEMBLY (CONTINUED)

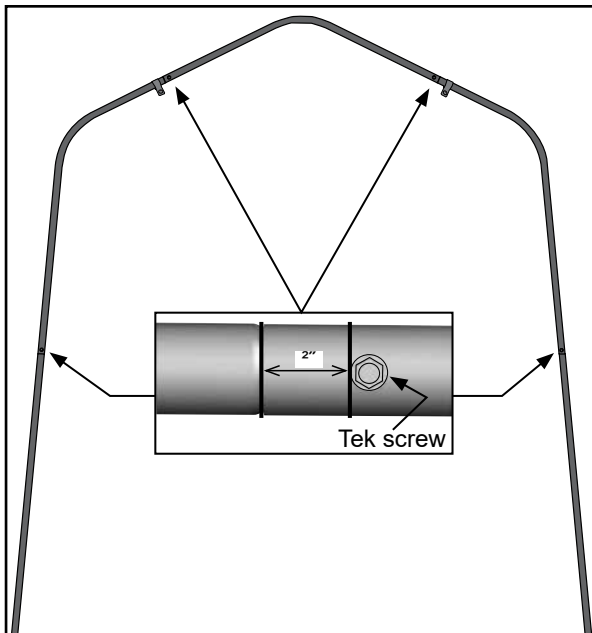
3. After joining the lower pipes, take two of the larger band clamps (QH1404) and slide one onto each of the assembled lower rafter pipes.



4. Slide the swaged end of each lower rafter leg assembly into the plain ends of the final pipe for the main rafter.

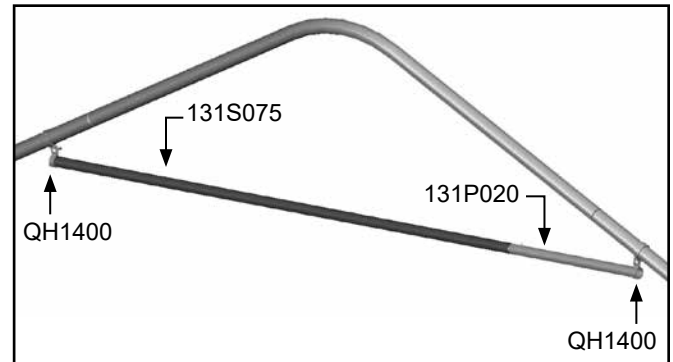


5. With the main rafter pipes seated at each joint and the rafter positioned on a flat surface, secure each joint with a single self-tapping Tek screw. Position Tek screw approximately 2" from pipe joint.



ATTENTION: Install the screws so they will not touch the cover once it is installed. This is typically on the backside of the rafter, which will be the surface visible from the inside of the shelter once the frame is assembled.

6. Position one (1) 131S075 pipe (75" swaged) and one (1) 131P020 pipe (20" plain) on the ground between the rafter legs, slide two (2) of the smaller band clamps (QH1400) onto each end of the pipe sections, and assemble the chord.



7. Secure each pipe joint of the chord with one FA4482 Tek screw. Standing on the chord assembly helps to keep the pipes from turning as the screws are installed. Be certain each joint is properly seated before installing the screw.



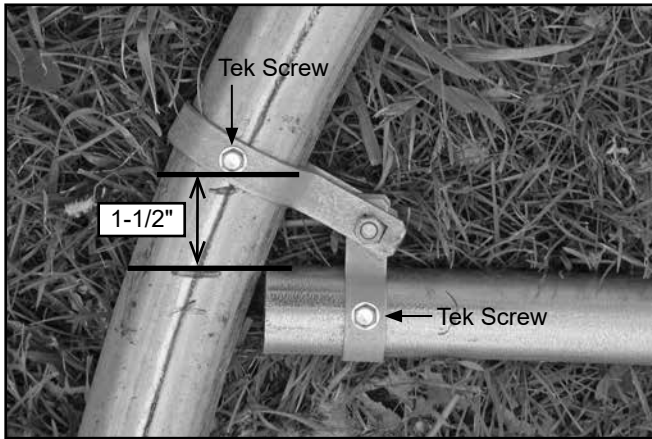
8. Position the assembled chord between the rafter legs and connect the chord to the rafter as shown.



Adjustable pliers can be used to squeeze the two band clamps if needed to thread the nut onto the bolt. Photo may show a similar but different assembly.

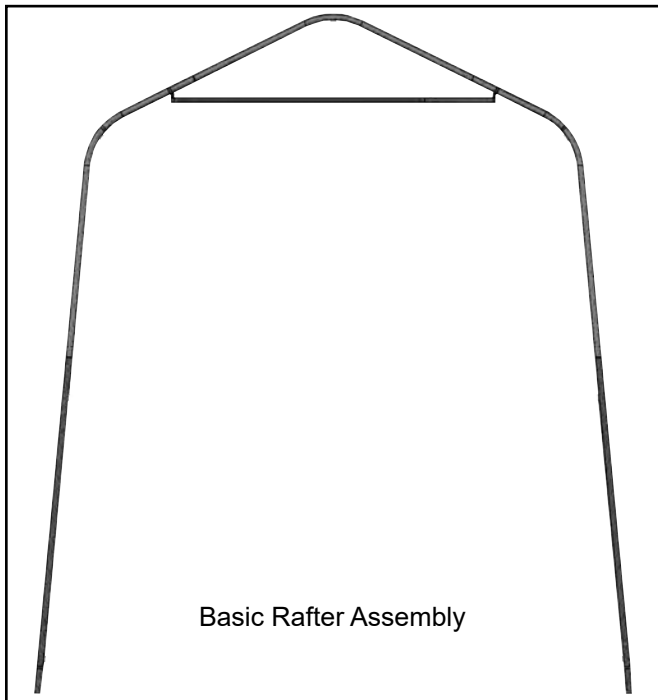
RAFTER ASSEMBLY (CONTINUED)

NOTE: Remove one nut and bolt from either clamp. (It will not be used.) The top of the chord will be about 1-1/2" down from the band clamp as shown below.



If the chord height needs lowered, slide it down at this time.

9. After the rafter chord is in place and loosely secured with the band clamps, verify that the chord is level and evenly positioned and tighten all band clamp bolts.
10. Secure the band clamps to the rafter pipe and chord using Tek screws as shown in photo above.
11. Repeat the steps to assemble all remaining rafters.

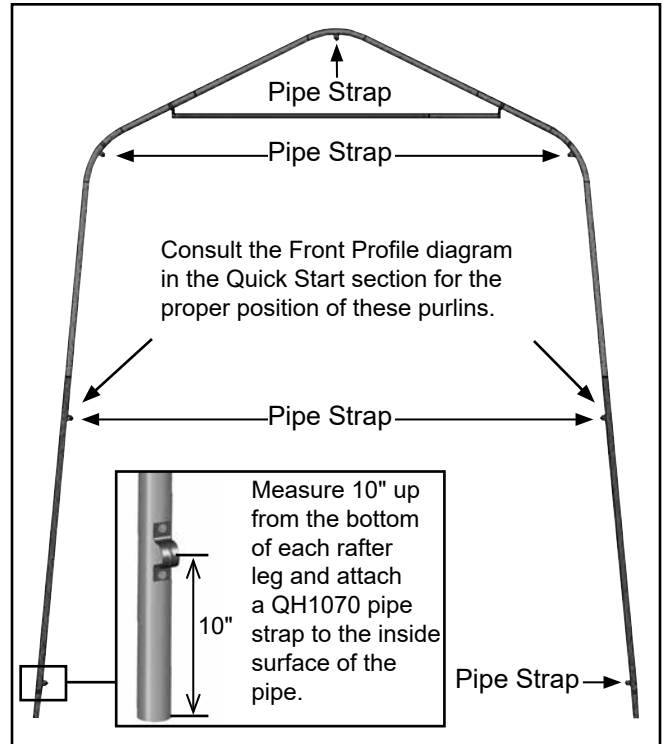


12. Complete the next steps to assemble the two end rafters.

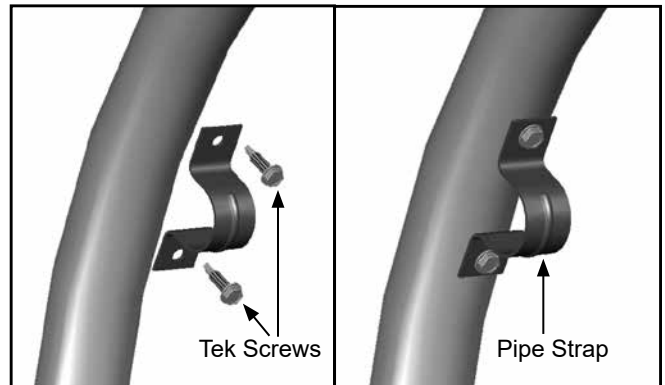
End Rafter Assembly Procedure

Complete the following steps *for the two end rafters only*.

1. Take one of the assembled rafters and place it on a flat surface.
2. Attach one pipe strap (QH1070) to the rafter in the locations shown below.



ATTENTION: These pipe straps are located on the inside of the rafter legs, underside of the rafter pipe (peak), and at the bottom of each rafter leg. *Do not tighten at this time.* These are tightened after each purlin is installed.



3. Repeat the steps to create the final end rafter. The end rafters will be identical when properly assembled.
4. Continue with the pre-marking the purlins instructions that follow.

CLEARSPAN™ VALUE LINE

ASSEMBLE AND PRE-MARK THE PURLINS

The following steps describe one way to speed the assembly process and eliminate the need to measure each purlin as it is installed. Pre-marking the purlins ensures that an accurate spacing of the rafter assemblies is achieved and maintained during assembly. Experienced contractors may elect to skip this procedure and continue with the Frame Assembly steps.

Gather the parts:

- Pipe 1.315" x 75" swaged (#131S075)
- Pipe 1.315" x XX" plain (#131P0XX)
- Marker and tape measure

NOTE: The purlins are part of the assembled frame and run perpendicular to the rafter assemblies. The purlins are part of the assembled frame.

There are seven (7) purlins that run perpendicular to the rafter assemblies. Each purlin consists of 1.315" x 75" (131S075) swaged pipes (number is determined by shelter length) and one (1) 1.315" x XX" (#131P0XX) plain pipe to complete each purlin run.

The XX" represents the remaining length needed to reach the end of the frame. Consult the Spec Sheet for part identification and the Side Profile diagrams in the Quick Start section for your building.

1. Select the required pipe sections for one purlin and connect these by inserting the swaged ends of the pipes into the plain ends until the entire purlin is assembled.

NOTE: Assemble the purlins in a location that is accessible during the assembly of the frame, but will not interfere with the process of lifting and setting the rafters.

2. Verify that each pipe joint is properly seated.

NOTE: These pipes must be separated during the assembly procedure. Do not fasten them together at this time.

3. For the 4' rafter spacing, measure four feet and three-quarters inches (4' 0-3/4") from one end of the assembled purlin and mark the distance on the pipe.

NOTE: This first measurement is three-quarters (3/4) inch longer than the on-center rafter spacing to account for the length of purlin pipe that extends through the end purlin clamp of the first end rafter.

4. From the location marked in the previous step, measure four feet (4') and make another mark on the assembled purlin.

5. Continue to mark the purlin in 4' intervals until all locations are marked. These marks help to maintain the 4' on-center rafter spacing of the shelter during assembly.
6. Repeat this procedure until all assembled purlins are marked.
7. After assembling all rafters and pre-marking the purlins, assemble the frame.

FRAME ASSEMBLY

Gather the parts:

- All rafter assemblies
- 1.315" pre-marked purlins
- Cross connectors (#102547)
- Tek screws (#FA4482B)

Frame Assembly Procedure

After all rafters are constructed and placed in an orderly fashion for frame assembly, proceed with standing the first end rafter.

Forklifts and personnel booms are recommended for lifting and setting the rafters. Consult a construction professional if you are not familiar with construction techniques and erecting similar structures.

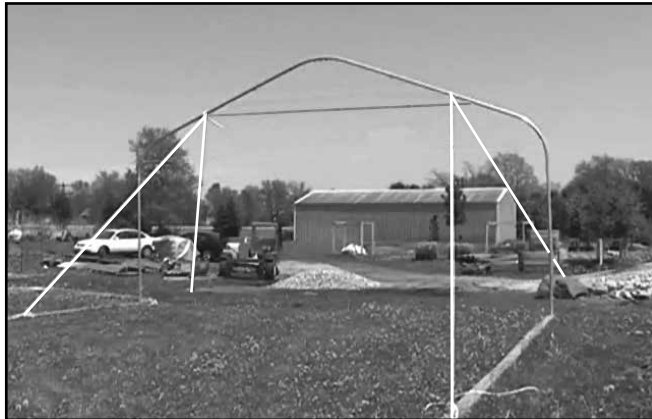
ATTENTION: Use the proper lifts. Rafter assemblies are heavy and awkward to handle. *The following photos show a rafter design different from actual shelter, photos are used for illustration purposes only.*

1. With the proper lift, lift the *first end rafter*. This rafter includes end clamps (installed earlier).



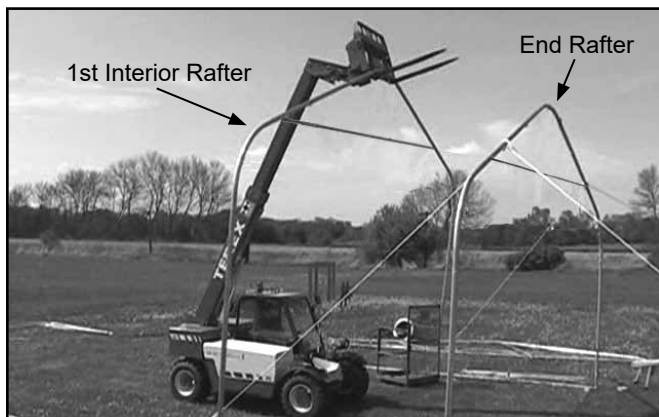
FRAME ASSEMBLY (CONTINUED)

- Anchor the first rafter with ropes or other temporary bracing. Verify that the rafter is plumb (straight).



NOTE: In the previous photo, ropes (identified by white lines for clarity) were used to temporarily anchor the rafter in place. For this first end rafter, all temporary bracing *must remain* in place until other rafters are set in place and attached to the first rafter and to each other. Customer-supplied baseboards are also shown.

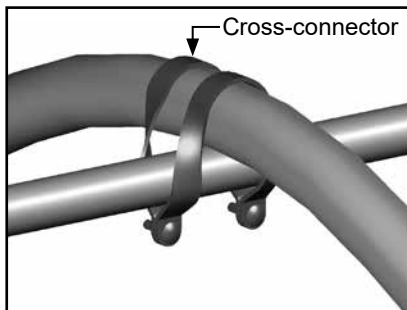
- Set the second rafter (first inside rafter) in place.



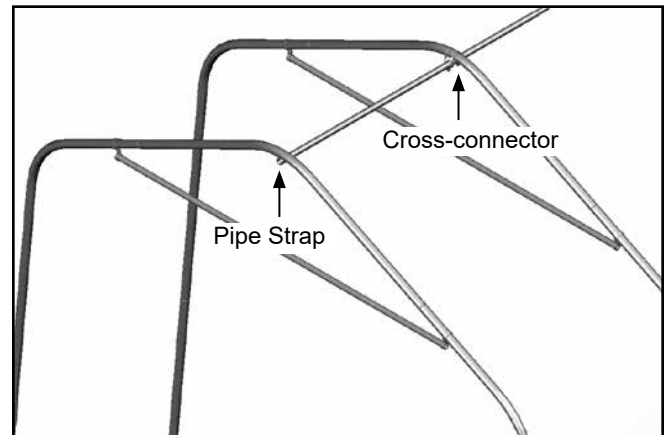
NOTE: Position someone at each leg to stabilize the rafter and to keep the rafter from tipping. Additional lifts or assistants may be needed.

- Place a cross-connector (#102547) over the peak of the inside rafter.

Photo to the right shows purlin inserted through the cross-connector toward the top of an interior rafter.

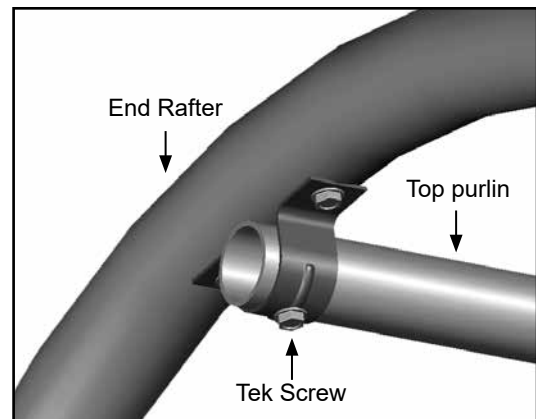


- Insert the first section of purlin (1 piece of pipe) through the cross-connector on the inside rafter and the pipe strap at the peak of the end rafter.

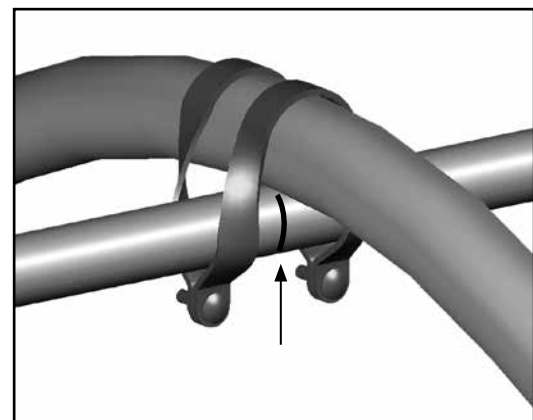


IMPORTANT NOTE: To prevent damage to the main cover and end panel, the purlin should extend through the pipe strap at the peak of the end rafter but not beyond the outside edge of the end rafter.

- With the purlin in position, tighten the pipe strap at the peak of the end rafter and secure the purlin using a Tek screw as shown below.



- Align the pre-marked location on the purlin with the center of the inside rafter to achieve the proper rafter spacing and tighten the cross-connector.



NOTE: If needed, use a hammer to tap the cross-connector and the purlin to align the mark with the center of the rafter.

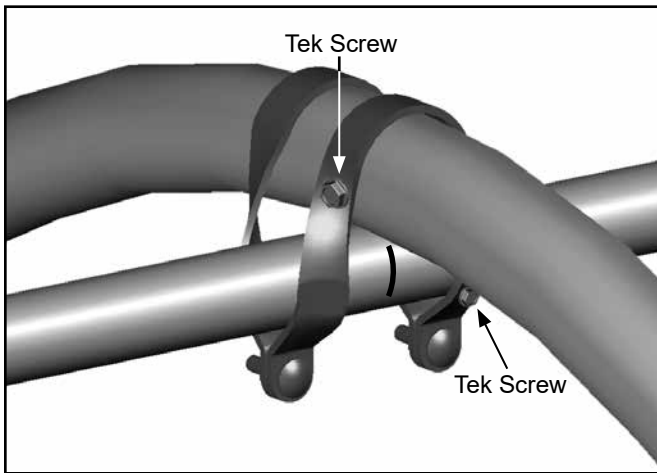
CLEARSPAN™ VALUE LINE

FRAME ASSEMBLY (CONTINUED)

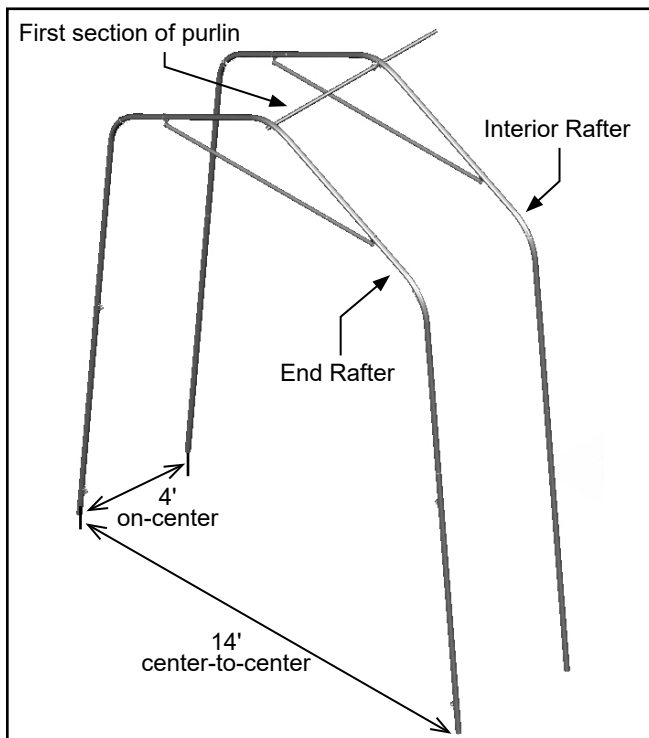
- Verify that both rafters are plumb and that the 4' on-center rafter spacing is maintained after both clamps are tightened.

NOTE: Do not allow the purlin to extend beyond the outside edge of the end rafter.

- After tightening the cross-connector, install a Tek screw (#FA4482B) through the cross-connector and into the purlin.

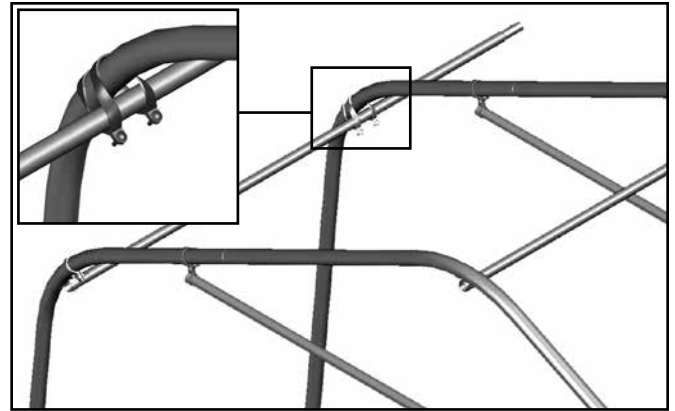


The first purlin and the first two rafters should appear as shown below.

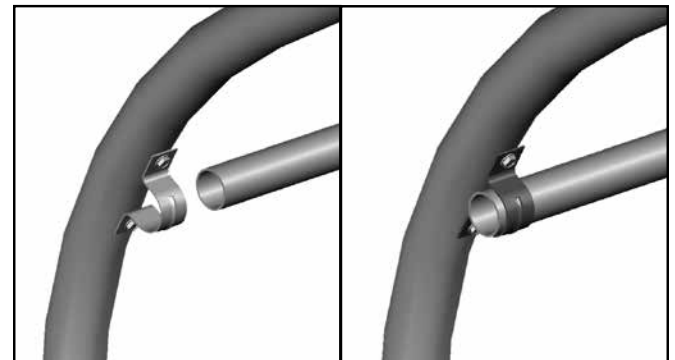


- Reposition the rafter legs of the first interior rafter (if needed) to achieve and maintain the 4' on-center rafter spacing and the 14' center-to-center width.
- Move down to the bend of the rafter and place a cross-connector over the rafter at that point.
- Select the first section of another *pre-marked purlin* and install that pipe.

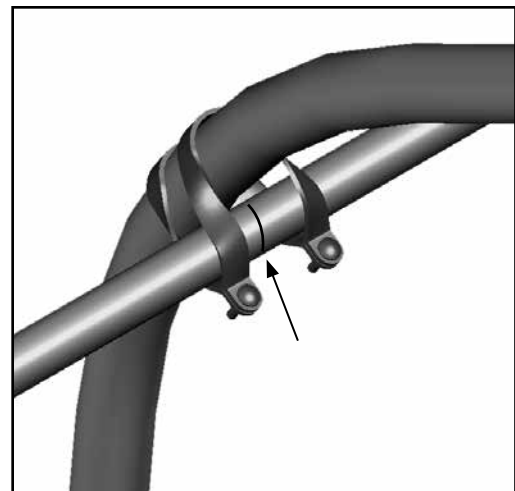
NOTE: Slide the purlin through the cross-connector as shown below.



- Align the cross-connector with the pipe strap that was attached to the end rafter in the same location.

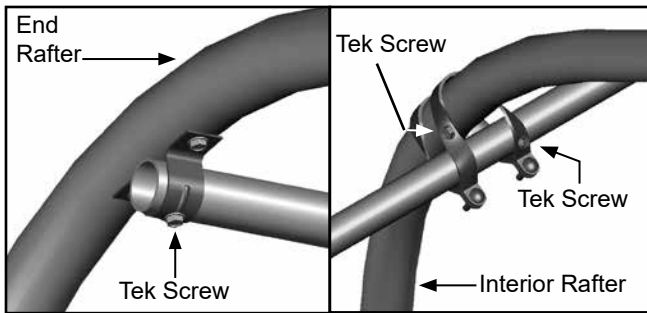


- Align the mark on the purlin with the center of the rafter as previously described.



FRAME ASSEMBLY (CONTINUED)

15. Install a Tek screw to *secure the purlin to the cross-connector and to the pipe strap on the end rafter*.

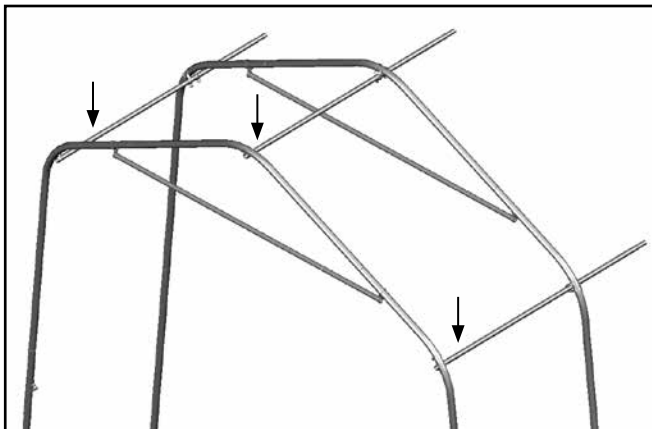


NOTE: To prevent damage to the main cover and end panels, do not allow the purlin to extend beyond the edge of the end rafter.

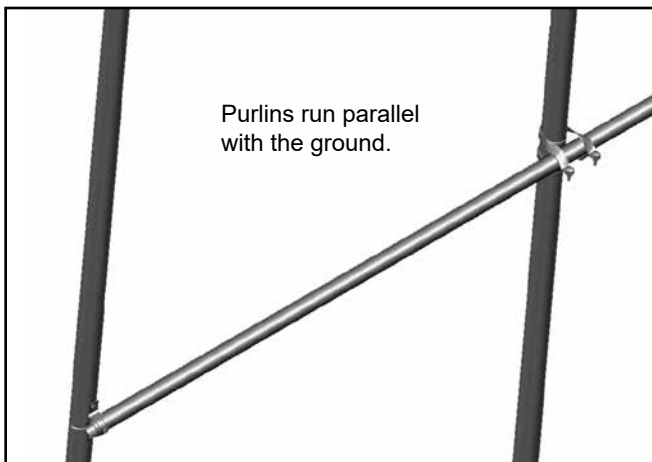
16. Repeat the steps to install the first section of the next purlin. See the arrows in the following diagram.

NOTE: Do not remove the temporary bracing until additional rafters are in place.

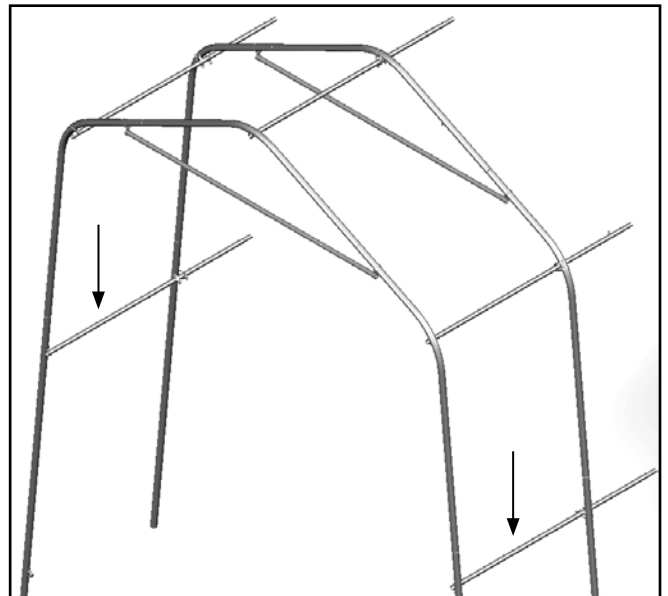
To this point, the assembled frame includes two rafters and three purlins as shown.



17. After attaching the first section of the third purlin to the rafters, move down the rafter assembly to the pipe joints. Place a cross-connector over each rafter pipe and install the first sections of the next two (2) purlins.

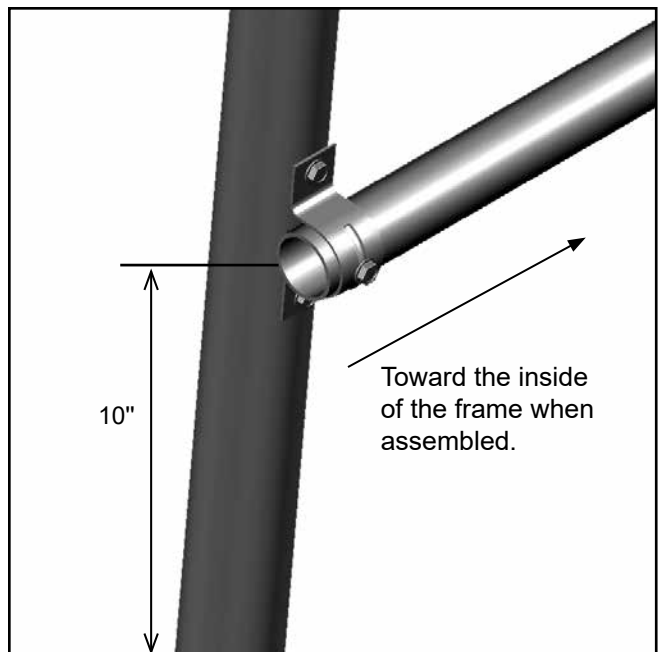


18. Verify that the rafters are plumb, align the mark on the purlins with the center of the rafter, and secure the purlins in place.
19. Secure the connectors and clamps to the purlins using Tek screws.



NOTE: Secure all cross-connectors and pipe straps to the rafters using Tek screws. Secure all purlin pipe splices with Tek screws.

20. Move to the lower end of the rafters and position the bottom purlin 10" up from the finished grade.

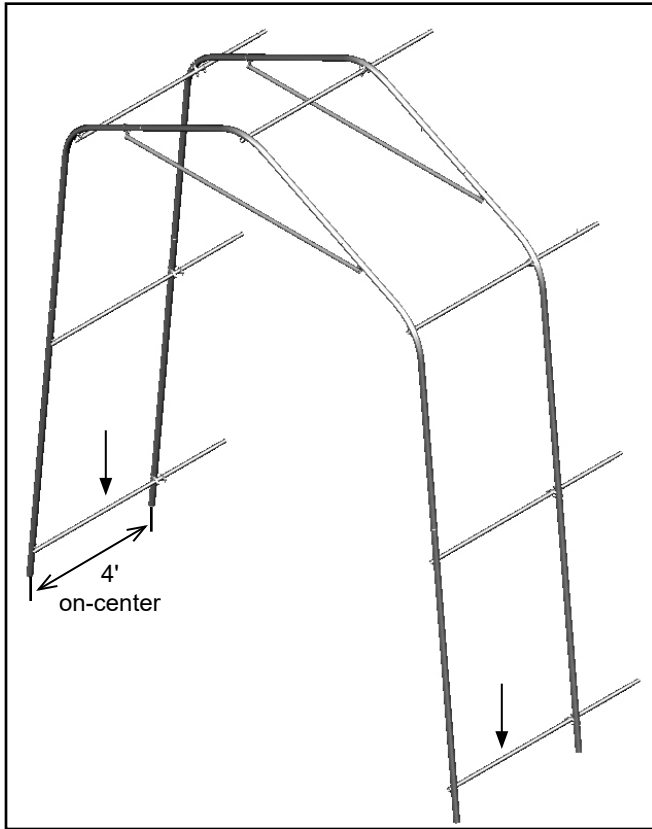


CAUTION: To prevent cover damage, do not allow the ends of the purlins to extend through the pipe strap and beyond the edge of the end rafter.

CLEARSPAN™ VALUE LINE

FRAME ASSEMBLY (CONTINUED)

21. Install the remaining purlin. Verify the rafter spacing is 4' on-center and tighten connectors.



22. Secure the connectors and clamps to the purlins using Tek screws.
23. Continue the frame assembly by setting the next rafter in place.



24. Continue to add the cross-connectors and the pre-marked sections of purlins and secure these to the rafter assemblies as previously instructed.

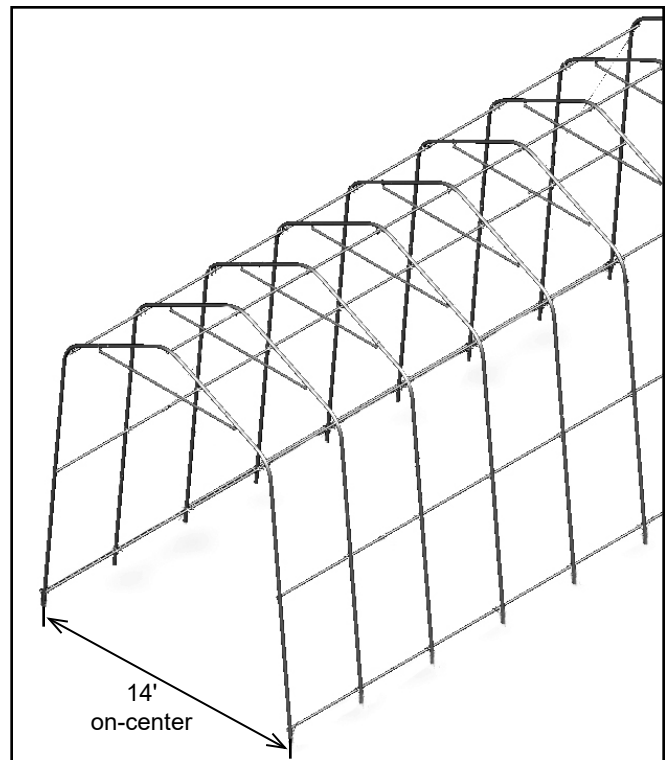
ATTENTION: The last rafter to place in position will be the remaining end rafter. This end rafter includes the pipe straps attached during the rafter assembly procedures and is identical to the first end rafter set in place.

25. Set the end rafter in place and align the purlins with the pipe straps (previously attached to the rafter).
26. Begin with the top pipe strap and ensure that approximately half an inch of the purlin extends through the pipe strap and tightened the pipe strap.
27. Verify that the end rafter is plumb.

NOTE: If the rafter is not plumb (straight up and down) and more of the purlin pipe needs to extend through the pipe strap and beyond the edge of the rafter, it may be necessary to cut the purlin to the required length.

Do not allow the purlin to extend beyond the edge of the rafter.

28. With all rafters in place and the seven (7) purlins installed and tightened, remove the temporary bracing (if needed) and verify that all purlin splices are secure with a Tek screw.
29. After the final purlin is attached to the end rafter, continue with squaring the assembled frame.



SQUARING THE ASSEMBLED FRAME

If the *Lay Out the Building Site* procedure was completed as presented near the beginning of this document, use the lines marked on the site to align the rafters and to adjust the width of the rafters as needed.

Rafter width is measured from center of one leg to the center of the other leg on the same rafter assembly.

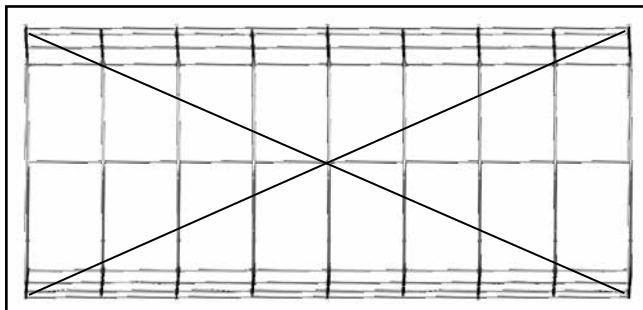
Complete these step to square the assembled frame.

1. Align all rafters using a straight line (if needed) or the marks on the site from the *Lay Out the Building Site* procedure completed earlier.
2. Beginning with the first rafter, verify that the distance between the rafter legs for that rafter is equal to the width of the building and adjust if needed.

To insure that the proper on-center width is maintained for the length of the building and for each rafter, it is important to measure between the rafter legs of each rafter and to adjust the width (if needed) to maintain a consistent width. Pulling the legs together can do this. Width is measured center-to-center.

3. After adjusting the rafters, perform a final square of the structure by measuring diagonally (corner-to-corner), and make sure that the two measurements are equal.

Top View



Frame shown is a different length.

4. Examine the framework and remove any sharp edges from the frame or reposition clamps and screws so they do not come in contact with the end panels or the main cover.
5. Tape all rafter splices with duct tape to protect the main cover when it is installed.
6. Verify that *all pipe splices* are secured using Tek screws.
7. After the framework is squared, read or reread the MUST READ document and anchor the framework in place.

ANCHOR THE SHELTER

At this point, anchor the frame. Once the frame is anchored properly, continue with these instructions.

WARNING: You must anchor the shelter as described in the MUST READ document.

FAILING TO PROPERLY ANCHOR THE SHELTER WILL RESULT IN DAMAGE TO THE SHELTER AND MAY CAUSE PERSONAL INJURY.

READ THE MUST READ DOCUMENT TO PROPERLY ANCHOR THE SHELTER.



The photo above shows an example of how an auger anchor is attached to one rafter leg. Frame shown may differ from the actual frame.

Consult the MUST READ document for additional information about anchoring the shelter.

FINISH ROUGH EDGES

Gather the parts:

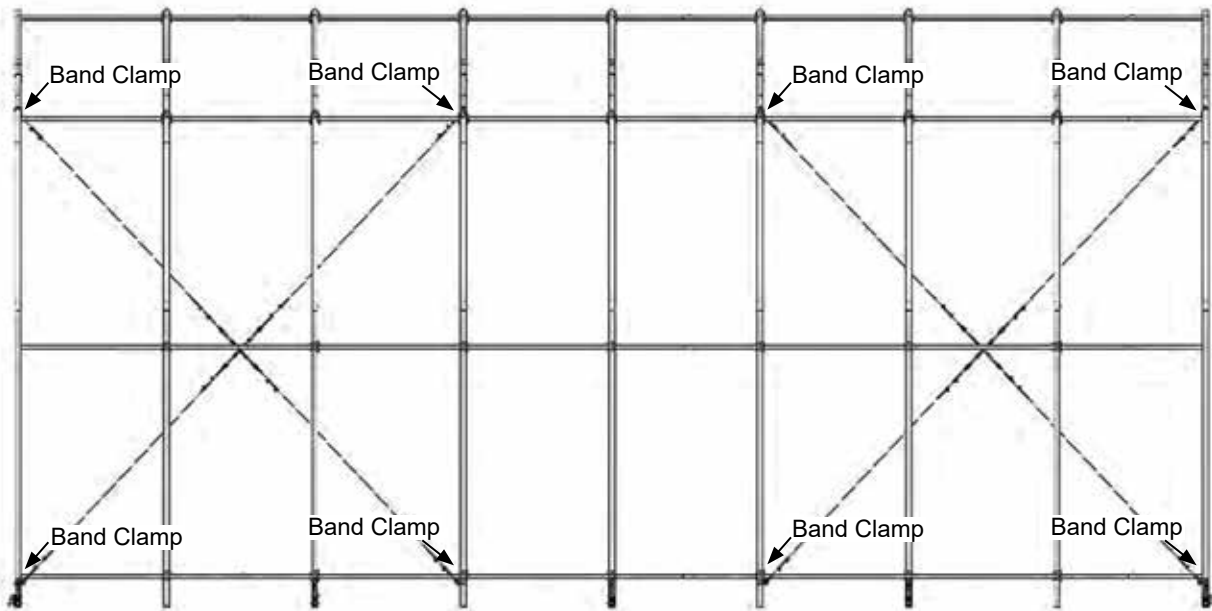
- Duct tape
 - Metal file (may not be needed)
1. Check for sharp edges on the frame. If present, file these smooth so they will not cut the cover.
 2. Apply two layers of heavy duct tape over all pipe connections and clamps that may contact the cover.
 3. Install band clamps for the cabling.

CLEARSPAN™ VALUE LINE

ATTACH BAND CLAMPS FOR CABLING

Cables attached to both ends of the shelter provide the diagonal bracing for the shelter. Band clamps secure the cable bracing to the shelter.

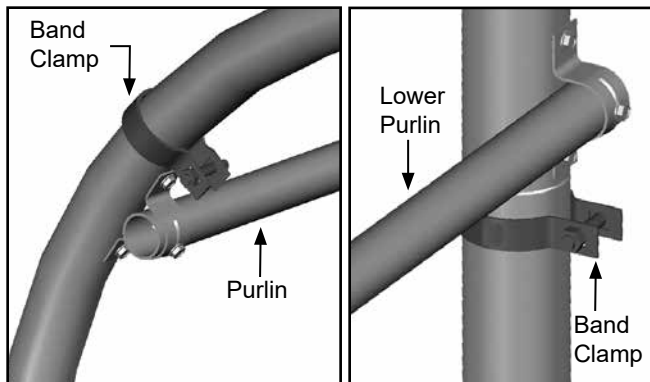
Eight (8) band clamps (#QH1404) are used on each side of the frame to secure the cable ends. Consult the diagram below and in the Quick Start section for cable locations.



Frame shown may vary in length from actual frame.

Complete these steps to install the band clamps:

1. Remove the nut and bolt from the clamp, carefully bend the band clamp open, and slide it over rafter in the proper location.
2. With the clamp in place, use a channel lock pliers to squeeze the clamp back into shape and reinstall the bolt and nut. *Do not fully tighten at this time.*



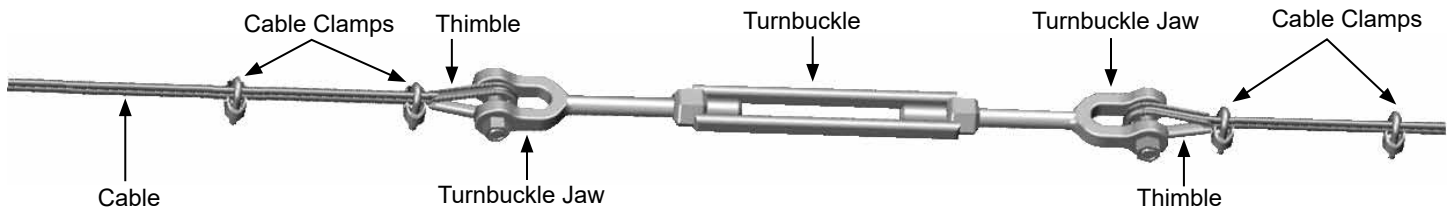
Band Clamp Location

3. Slightly tighten the nut and bolt or use a small piece of duct tape to hold the clamp in position.
4. Continue by assembling the cables.

CABLE ASSEMBLY

Cable assemblies provide diagonal bracing for the building. Each cable assembly includes the following items:

- Two (2) lengths of cable (Measure from point-to-point on the frame and cut as needed.)
- Turnbuckle (1)
- Cable thimbles (4) and cable clamps (4)



Typical Turnbuckle Assembly

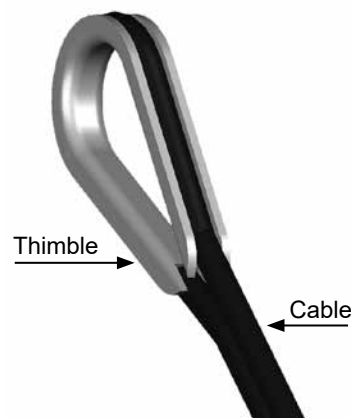
NOTE: For each cable assembly, two (2) additional thimbles and four (4) additional cable clamps are used to attach the cable assembly to the purlin clamps. Consult the Cable Diagram on the following page and the All Frame Diagram for clarification and cable locations.

Cable Assembly Procedure:

1. Using the Side Profile diagram (and others) in the Quick Start section as a guide, measure the distance needed on the frame and cut the cable to the proper length for each assembly. Extra cable has been sent for the cabling. (Make a single assembly *before* making them all. This allows a check to be sure the correct length has been cut.) Make the necessary length adjustments as needed.
2. Place one cable thimble approximately twelve inches (12") from the end of a cable section and wrap the cable around the thimble as shown in the figure to the right.
3. Grasp both sections of the cable near the thimble and position one cable clamp one inch away from the thimble as shown above.

NOTE: Position the clamp on the cable with its U-bolt portion over the short/dead section of the cable.

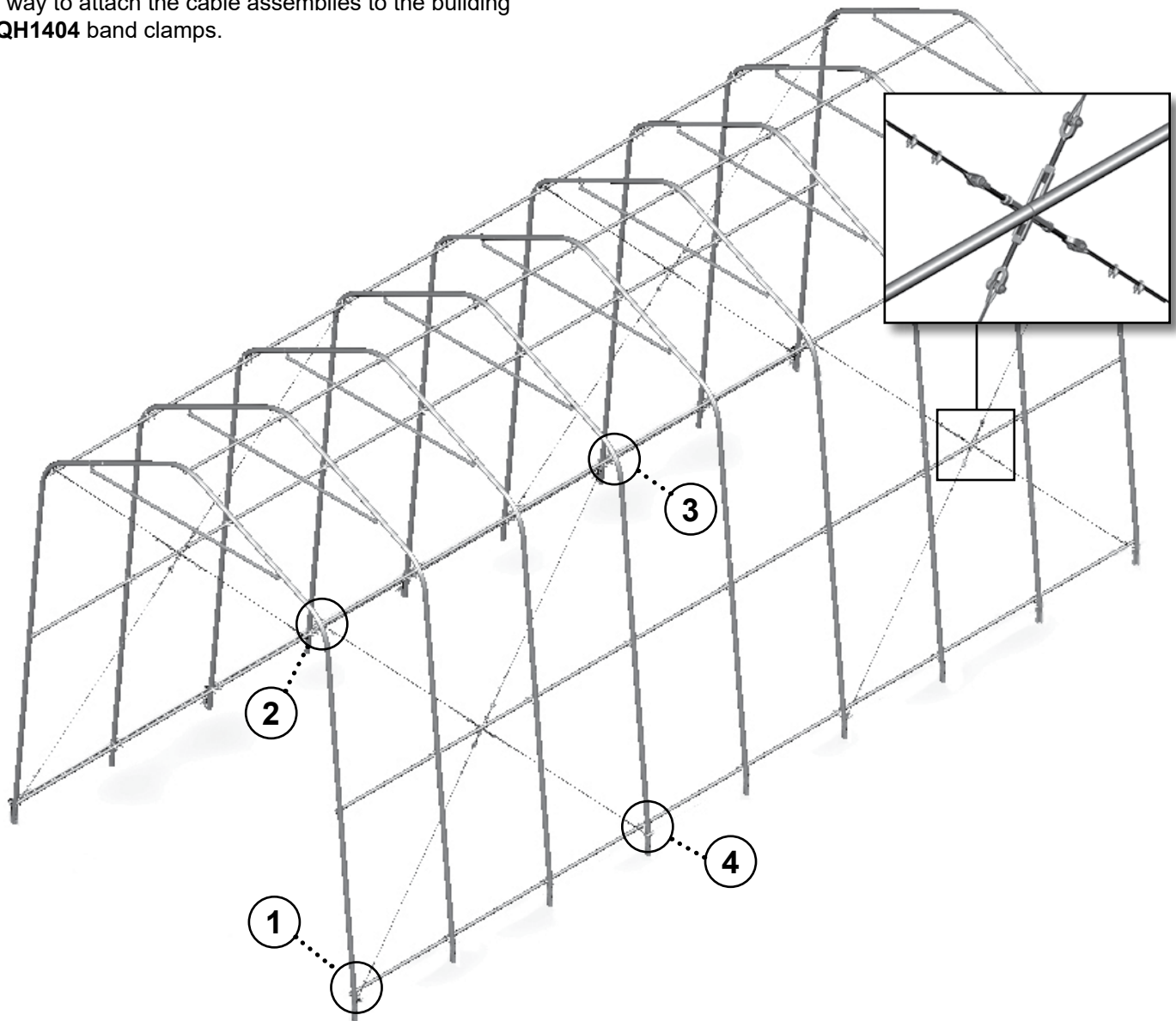
4. With the saddle portion of the cable clamp in position, thread the nuts onto the U-bolt section of the clamp and tighten slightly to maintain the position of the clamp on the cable.
5. Install a second cable clamp on the cable six to eight (6"-8") inches from the first clamp.
6. Tighten both clamps.
7. Remove the bolt from the jaw of the turnbuckle and position the cable end with the thimble into the jaw of the turnbuckle.
8. Insert the bolt through the eye of the turnbuckle and the cable thimble, thread the nut onto the bolt, and tighten.
9. Repeat Steps 2-8 for the remaining length of cable for this assembly.
10. Open the turnbuckle to its longest position.
11. Repeat the above procedure for all remaining side and upper cable assemblies.



CLEARSPAN™ VALUE LINE

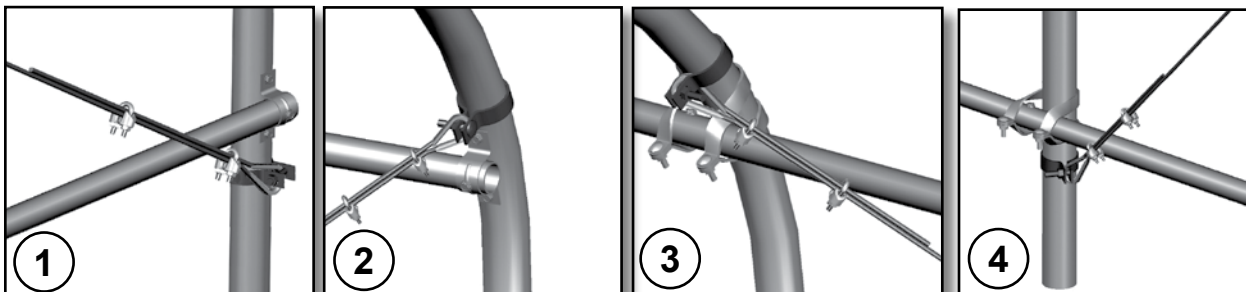
CABLE PLACEMENT

The diagram and inserts below identify the placement and proper way to attach the cable assemblies to the building using **QH1404** band clamps.



ATTENTION: The cable positions are identical for both sides of the frame. All cable assemblies are positioned at the ends of the frame regardless of the frame length. Consult the Quick Start diagram for your shelter for additional details.

All inserts show the circled locations as seen standing inside the frame.



TIGHTEN THE CABLING

The positions of the cable assemblies are identical for the opposite side and the remaining end of the building that are not shown in the previous diagram. For cable locations for your building, consult the All Frame Diagram.

ATTENTION: You must anchor the frame *before* tightening the cables.

1. After attaching all cable assemblies to the building frame, return to the first set of turnbuckles and tighten the cables.

NOTE: Tighten the cables in each section evenly so that the frame remains plumb.

2. After one set of cables is tightened, move to another set and repeat the tightening steps.
3. Repeat this process until all cables are tight.
4. Continue with assembling the conduits for the end panels.

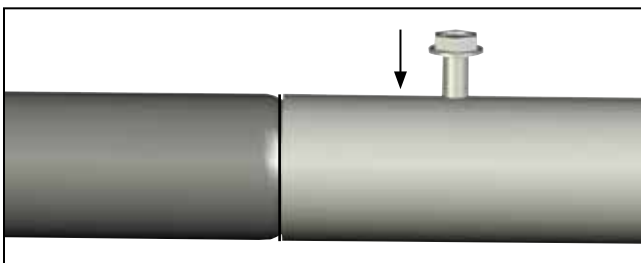
END CONDUIT ASSEMBLY

Gather the parts:

- Pipe 1.315" x 75" swaged
- Pipe 1.315" x 22.5" plain
- Duct tape
- Tek screws

Complete the following steps:

1. Locate the end conduit pipes. Each end conduit consists of two (2) 75" pipe and one (1) 25.5" pipe. Two (2) end conduits are required.
2. Assemble an end conduit by connecting two (2) swaged pipes and one (1) plain pipe.
3. Secure each joint using Tek screws and tape over the Tek screws to protect the end panel.



4. Repeat assembly for the remaining end conduit.

PREPARE END PANELS

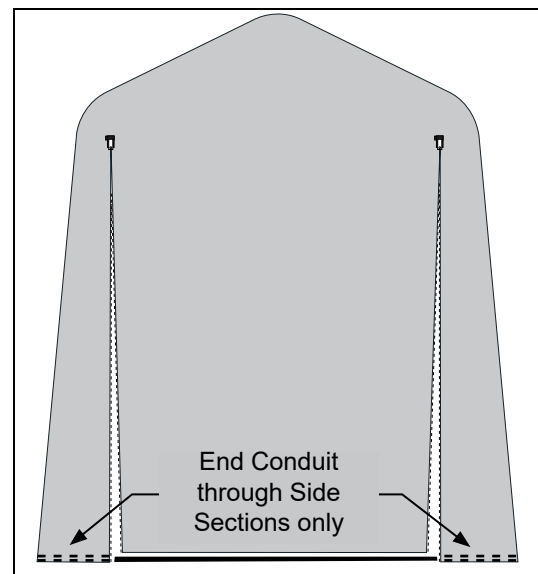
CAUTION: To prevent damage, do not install end panels on a windy day.

Gather the parts:

- End panel solid (plain)
- End panel 2-zip (zippered)
- End conduit assemblies (2)
- QH1330 Angled brackets
- Tek screws

Assembly Procedure

1. Locate the end panels, unfold each panel at the base of the assembled frame (where they will be installed) with the inside surface facing up.
2. On the zippered end panel, insert the end conduit through the two side sections of the end panel as shown below.



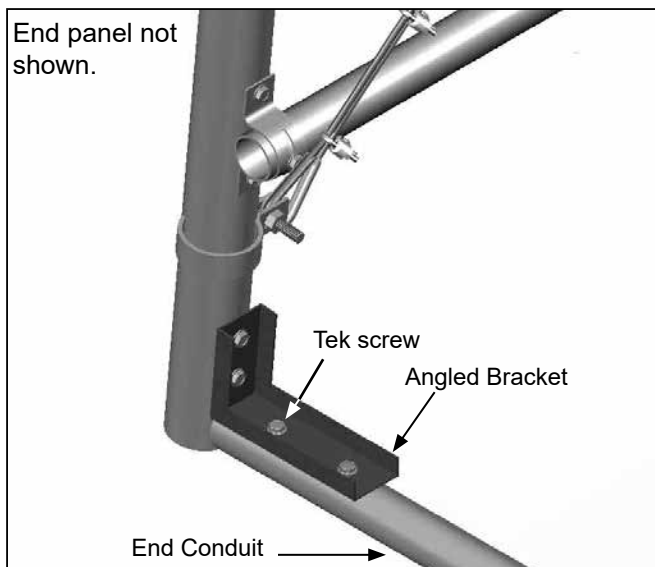
NOTE: Do not insert the conduit through the door section of the zippered end panel.

3. Slide the remaining end conduit assembly into the hem at the bottom of the solid (plain) end panel.
4. Continue by attaching end conduits to the frame as described in the next procedure.

CLEARSPAN™ VALUE LINE

ATTACH END CONDUIT ASSEMBLIES

1. Using two (2) QH1330 angled brackets, secure one (1) angled bracket to each end of the end conduit and secure the conduit to the legs of the end rafter. See the following diagram.



NOTE: It may be necessary to cut or slide the pocket of the panel to attach the bracket to the end panel conduit and to the end rafter leg.

2. Repeat the steps for the remaining end panel.
3. Attach the end panels to the end rafters as described in the following instructions.

ATTACH END PANELS

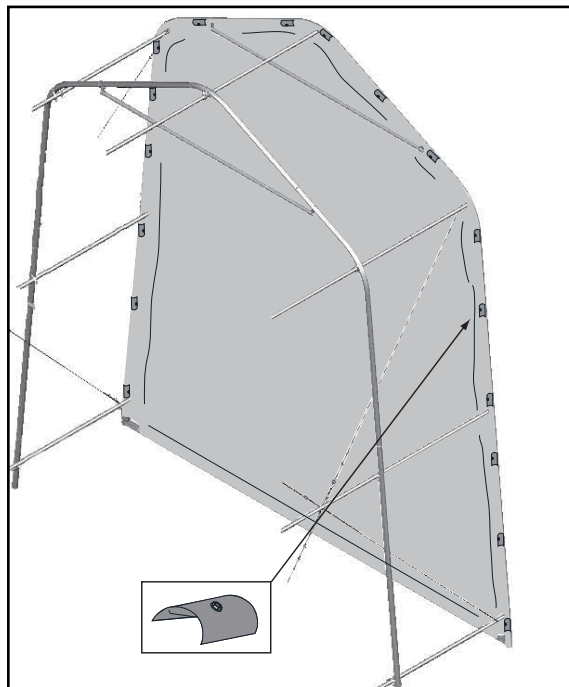
Gather the parts:

- End panel assemblies
- CC6214 fabric clips (Use half for each end panel.)
- Tek screws
- Measuring tape
- Scissors

Assembly Procedure

1. While standing inside the shelter, start at the peak of the end rafter and pull the solid (plain) end panel over the top of the rafter so the panel edge is wrapped to the inside of the rafter.
2. Secure the solid end panel in place at the top center of end rafter using one (1) fabric clip and a Tek screw.

3. Take the remaining fabric clips for the first panel and secure the panel to the back of the rafter using the clips. *Evenly space the clips and work along the rafter.*



NOTE: Secure each fabric clip to the end rafter using a Tek screw. Position the clip and the Tek screw in a location that will not contact the main cover when it is installed. *Actual number of clips may differ from what is shown in the diagram.*

The end panel may be shipped as an untrimmed rectangular piece. If desired, use scissors (or other means) to trim the excess end panel material that remains after the panel is attached.

Do not remove too much of the excess panel. Allow some to remain so the panel can be stretched if needed.

4. Repeat Steps 1-3 to pull the zippered end panel up and into position and to secure it to the frame.

NOTE: Do not over-stretch the end panel when attaching it. The end panel conduit must remain on the ground during this procedure.

5. Continue with the installation of the roll-up door assembly.

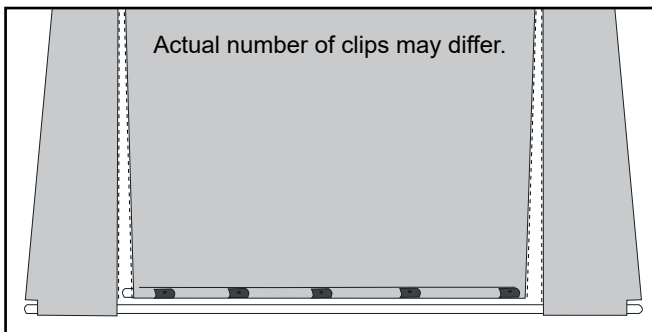
INSTALL ROLL-UP CRANK ASSEMBLY

Gather the parts:

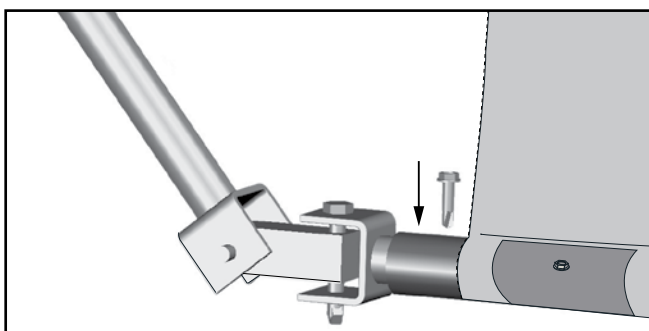
- Pipe 1.315" x 75" Swaged
- Pipe 1.315" x 49.5" Plain
- Spin Handle
- Universal Joint
- Fabric Clips (#CC6212)

Assembly Procedure

1. Assemble the roll-up door conduit by connecting the 75" swaged pipe to one (1) 49.5" plain pipe, secure the joint using a Tek screw, and tape over the Tek screw to protect the end panel.
2. Insert the conduit assembly into the door pocket. When installed correctly, the conduit is flush at one end of the roll-up panel and will extend an inch or so beyond the other end of the panel where the crank will be attached.
3. Secure the conduit to the panel using CC6212 fabric clips as shown below. Evenly space the clips.

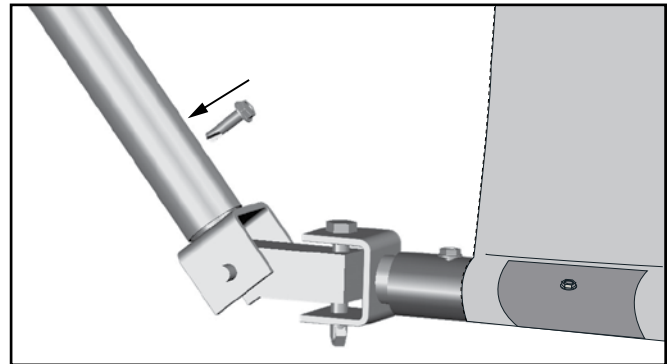


4. Attach the universal joint to the conduit in the pocket using a Tek screw to secure the connection.

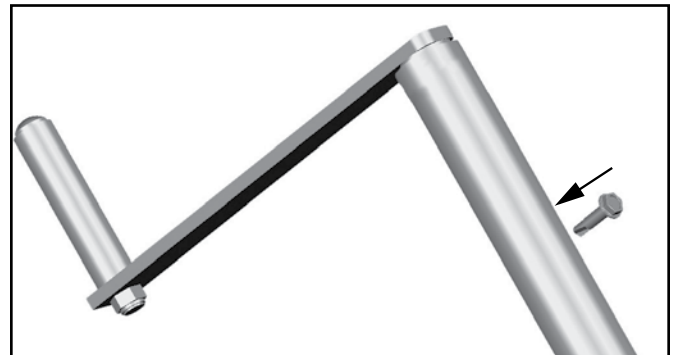


5. Assemble the extension pipe by connecting two (2) 75" swaged pipes and secure the joint using a Tek screw
6. Cut off the tapered end the extension pipe assembly.

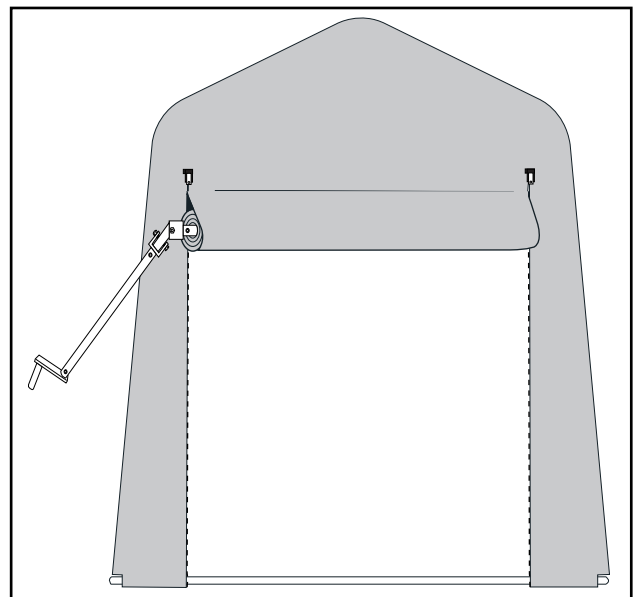
7. Secure the extension pipe to the remaining end of the universal joint using a Tek screw as shown below.



8. Add the spin handle to the extension pipe and secure the connection using a Tek screw.



The roll-up crank assembly is now complete and is shown below. Test the assembly. Remove the crank and trim the extension pipe to the desired length if needed.



NOTE: If equipped, use the zipper extension pole to zip and unzip the door panel on tall buildings. (May require an additional purchase.)

CLEARSPAN™ VALUE LINE

FINAL FRAME CHECK

1. Verify that all rafter pipe splices and purlin splices are secured with a Tek screw.
2. Recheck the frame assembly for sharp edges or clamps and bolts that may interfere with the installation of the cover. Reposition clamps and bolts as needed. Tape all rafter pipe joints with duct tape to protect the cover.
3. Check all turnbuckles to verify that they are tight.
4. Tape the loose or frayed ends of all cables to protect the cover.
5. Verify that all bolts and clamps are tight.

PREPARE MAIN COVER

Gather the parts:

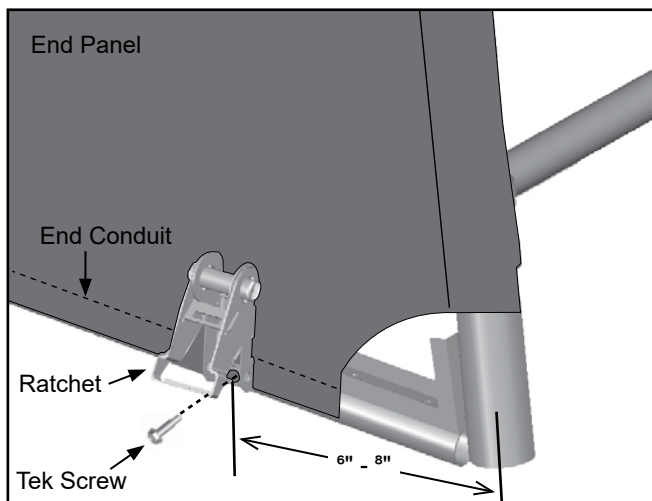
- Main cover
- 1.315" x 75" swaged pipe (131S075)
- 1.315" x XX" plain pipe (131P0XX)
- Ratchets (QH1061) and Tek screws

Assembly Procedure

NOTE: When handling the main cover and setting it in position, do not pull on the end straps. They will pull out of the cover.

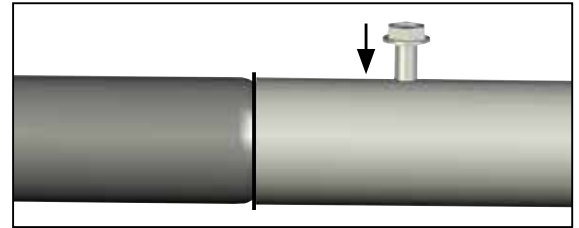
⚠ WARNING: To prevent damage to the cover and to prevent serious personal injury, DO NOT attempt to install the main cover on windy days.

1. Fasten a ratchet to the end conduit using a Tek screw in the bottom hole of the ratchet as shown below. The ratchet should be about 6" - 8" in from the end of the conduit.



2. Repeat this step at all remaining corners.

3. Assemble two main cover conduits. Start each conduit assembly with one plain pipe and add swaged pipes to arrive at the correct length. *This conduit is identical to the length of the purlins.*
 - a. Locate all sections of pipe needed to assemble the cover conduit.
 - b. Insert the swaged end of each pipe into the plain end of another pipe until the conduit is assembled.
 - c. Secure each pipe joint with a Tek screw.



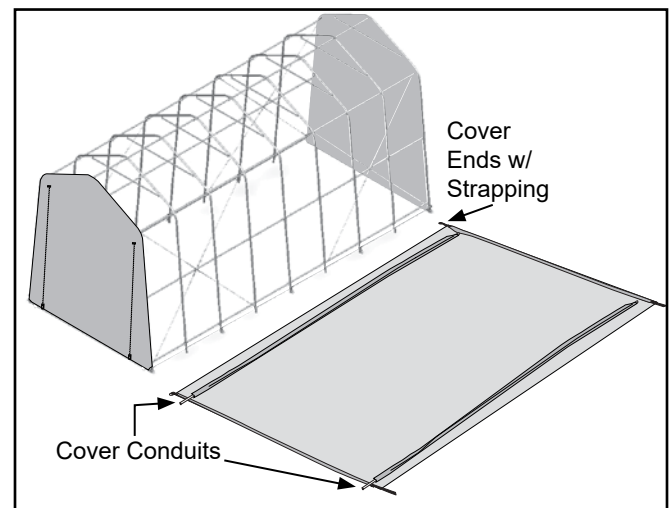
NOTE: Use duct tape to tape the Tek screws to prevent damage to main cover.

Cover conduits are inserted into the pockets sealed into the main cover. The conduits are used to tighten and secure the main cover.

4. After assembling the cover conduits, locate the main cover and unfold it on a clean, smooth surface near the frame.

NOTE: Unfold the main cover with the inside surface facing up. Pockets will be visible as shown below.

5. Locate the cover ends with strapping and align with the front and back of the shelter.
6. Insert the cover conduits into the pockets of the main cover.



ATTENTION: Do not insert any conduit into any pocket that includes an installed strap.

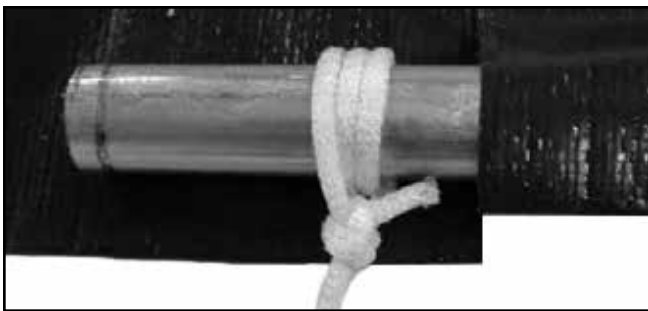
ATTACH MAIN COVER

Gather the parts:

- Main cover (with conduits already inserted)
- Ropes long enough to reach over the frame (provided by customer)
- Ratchets (QH1061) and 103620B straps
- Tek screws
- Box cutter or utility knife

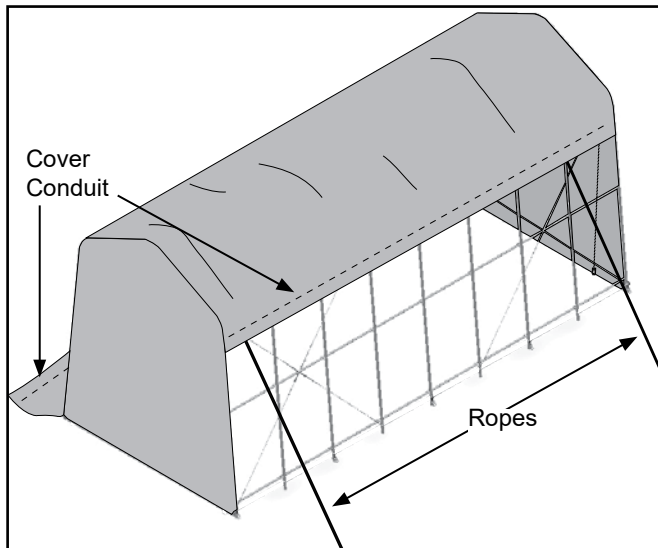
Assembly Procedure

1. To pull the cover over the frame, attach ropes to both ends of the cover conduit. Wrap the rope around the conduit a few times to prevent it from slipping off.



NOTE: Depending on the length of the cover it may be necessary to attach additional ropes to the cover conduit between the end ropes by cutting a small opening in the cover pocket and tying the rope around the conduit. **DO NOT** cut through the main cover. *Cut through the conduit pocket only.*

2. With all ropes attached to the cover conduit, lift the conduit and carry the cover toward the base of the frame.
3. Toss the ropes over the frame and pull the cover into position. One person is required at each rope.

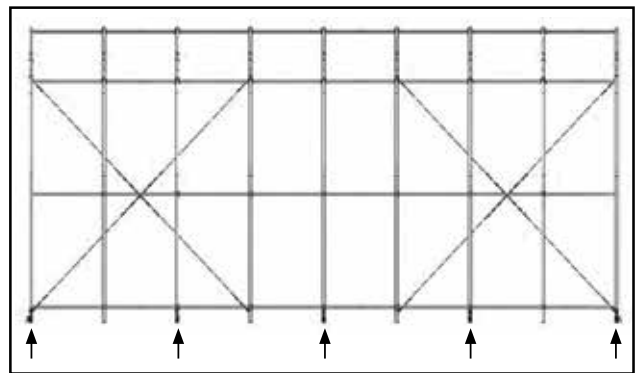


4. Once the main cover is pulled into position, center the cover on the frame and tie the ropes to the frame to temporarily secure the cover. Loosely secure the ends of the cover to the ratchets attached to the end panel conduits using the installed bonnet strap.

ATTENTION: Do not tighten the straps at this time

5. Divide the remaining number of ratchets in half. Place the ratchets on the ground next to the rafter where they will be attached. See Side Profile diagrams.

NOTE: Ratchets are evenly spaced long each side of the shelter and *directly across from each other on the same rafter assembly*. Rafters are identified by the arrows below.



NOTE: Diagram above is an example of the 32' shelter.

6. Using the main cover conduit and strap length as guides, attach the ratchets to the rafters at the proper height. Fasten ratchets to the outside (or inside if desired) of the rafters using Tek screws.

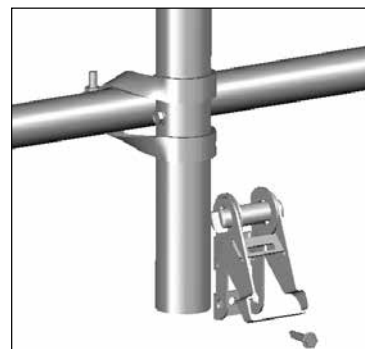
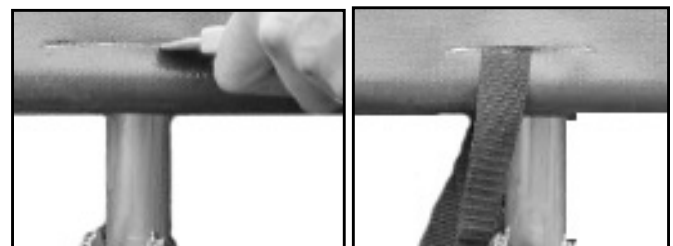


Diagram shows one possible ratchet location. Adjust ratchet position on the rafter leg as needed based on the strap length and cover conduit in the cover pocket.

7. Lift the cover skirt and cut a slit in the cover conduit at the rafter position. Insert a 3' section of strap through the slit and around the cover conduit.

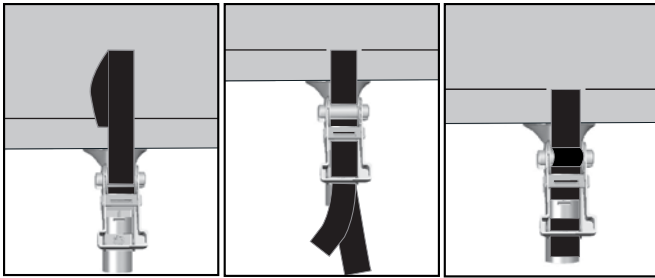


NOTE: **DO NOT** cut through the main cover. *Cut through the conduit pocket only.*

CLEARSPAN™ VALUE LINE

ATTACH MAIN COVER (CONTINUED)

8. Thread the strap ends into the ratchet and slightly tighten.



NOTE: It may be necessary to remove excess strap if it binds up in the ratchet.

9. Repeat the steps for the remaining ratchets.
10. Verify that the main cover is centered end-to-end and side-to-side. Adjust as needed.
11. Using additional help (if needed) tighten the main cover beginning with the ratchets along the side of the shelter frame.
12. After the side ratchets are tightened, return to the end ratchets and tighten the bonnet straps of the main cover.

NOTE: Loosen the ratchets if needed to remove excess strap and retighten. Loosen all ratchets if needed to reposition the main cover on the frame and retighten the ratchets.

13. Fold the skirt of main cover down and over the ratchets to complete the installation of the main cover.

SHELTER CARE AND MAINTENANCE

Proper care and maintenance of your shelter is important. Check the following items periodically to properly maintain your shelter:

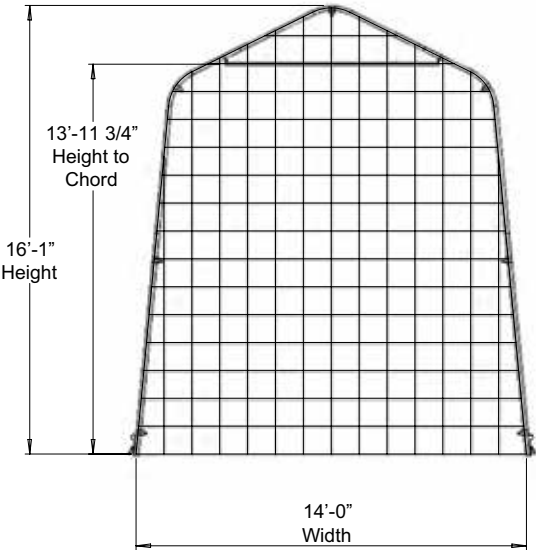
- Frequently check the main cover and panels (if equipped) to see that these remain tight and in proper repair.
- Check the cable turnbuckles and cable clamps to see that these remain tight. Tighten as needed.
- Check connections and all fasteners to verify that they remain tight.
- Do not climb or stand on the shelter at anytime.
- Remove debris and objects that may accumulate on the shelter. Use tools that will not damage the cover when removing debris.
- Remove snow to prevent excess accumulation. Use tools that will not damage the cover when removing snow.
- Check the contents of the shelter to verify that nothing is touching the cover or the side panels that could cause damage.
- Check the anchoring system to ensure that all components are tight and in good repair.
- Replace all damaged or worn parts immediately.
- Inspect all components frequently.
- If the shelter is moved, inspect all parts and connections before reassembling.
- For replacement or missing parts, call 1-800-245-9881 for assistance.

NOTE: With the exception of Truss Arch buildings, ClearSpan™ shelters and greenhouses *do not* have any tested loading criteria.

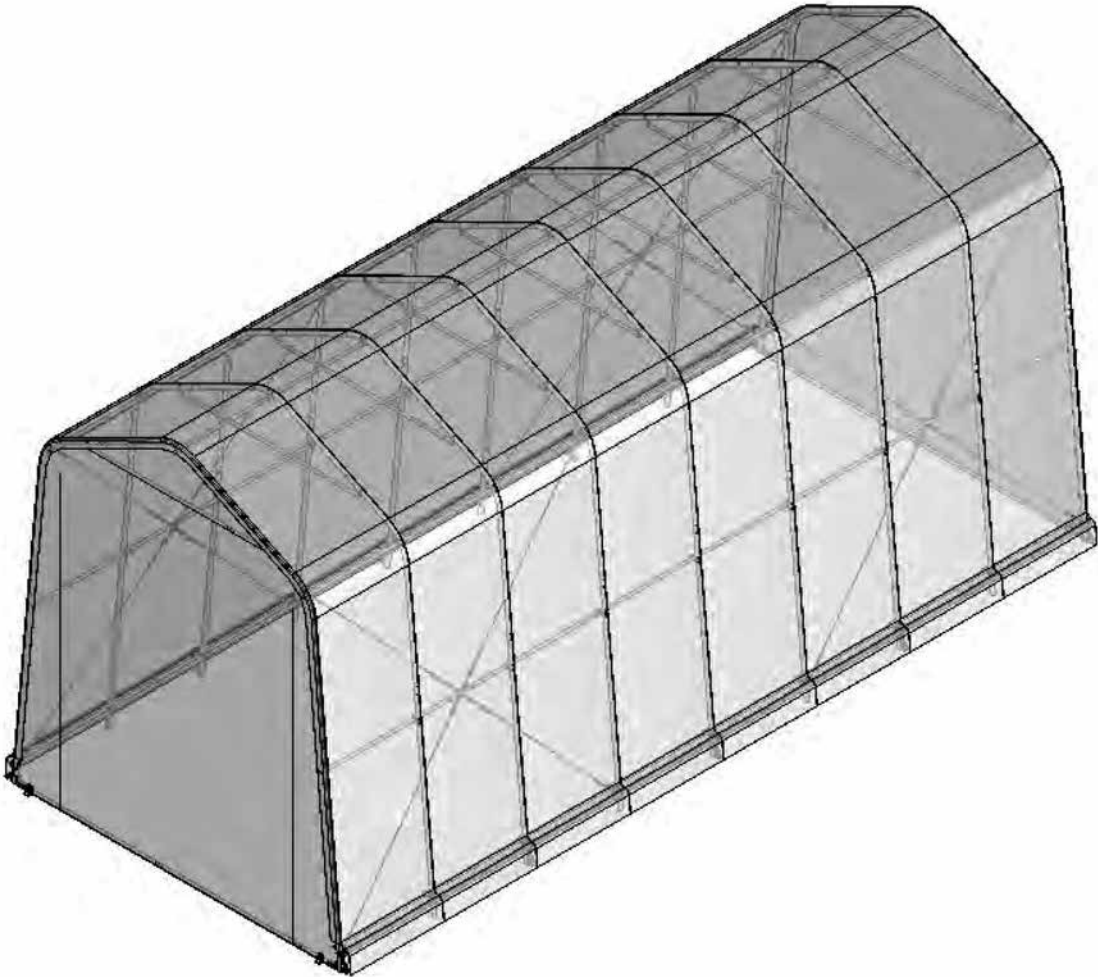


QUICK START GUIDE

14' Wide Storage Building



FRONT
Grid Represents 12" Squares



Frame shown may vary in length from actual frame.

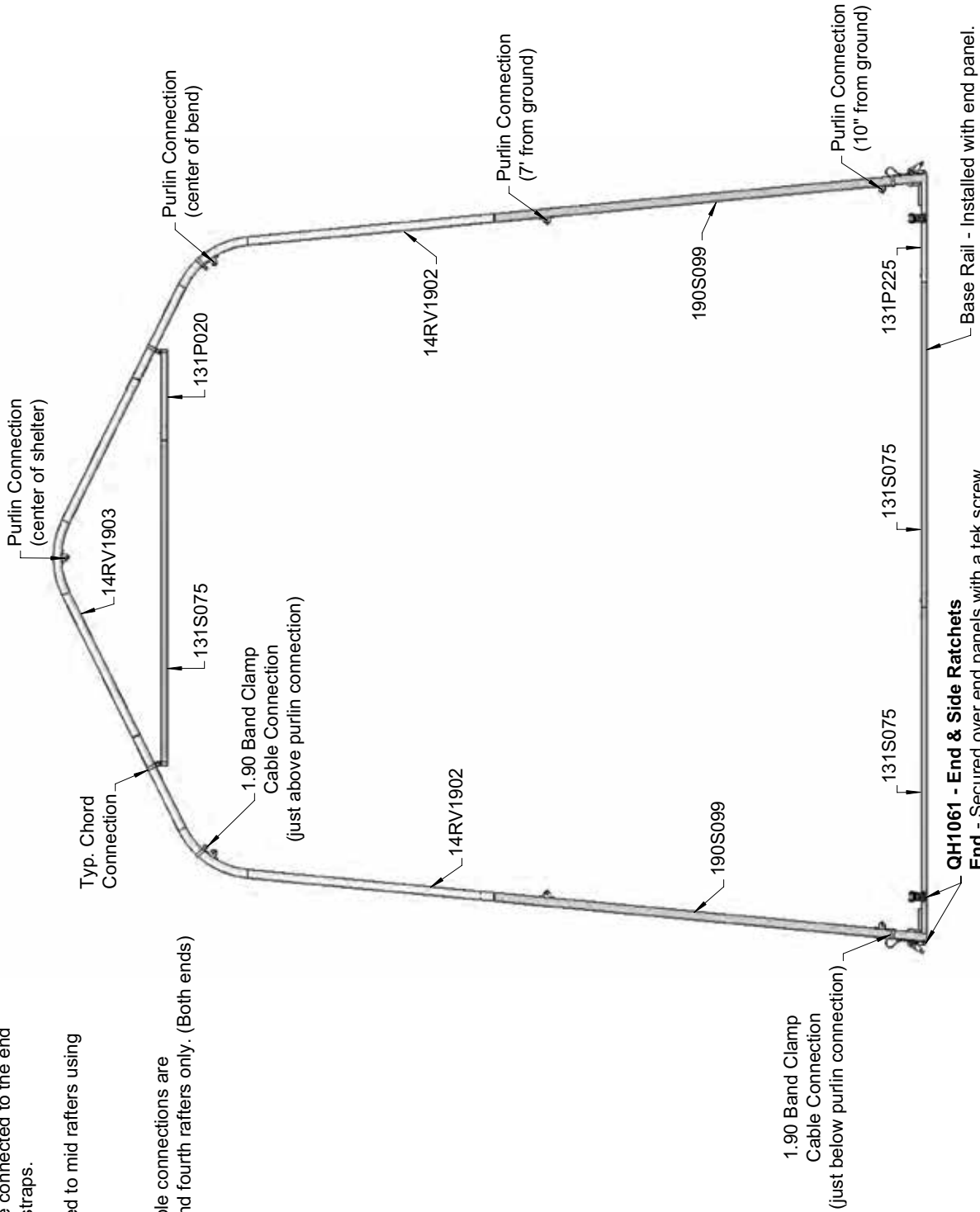
FRONT PROFILE

Note - All purlins are connected to the end rafter using 1" pipe straps.

Purlins are connected to mid rafters using cross connectors.

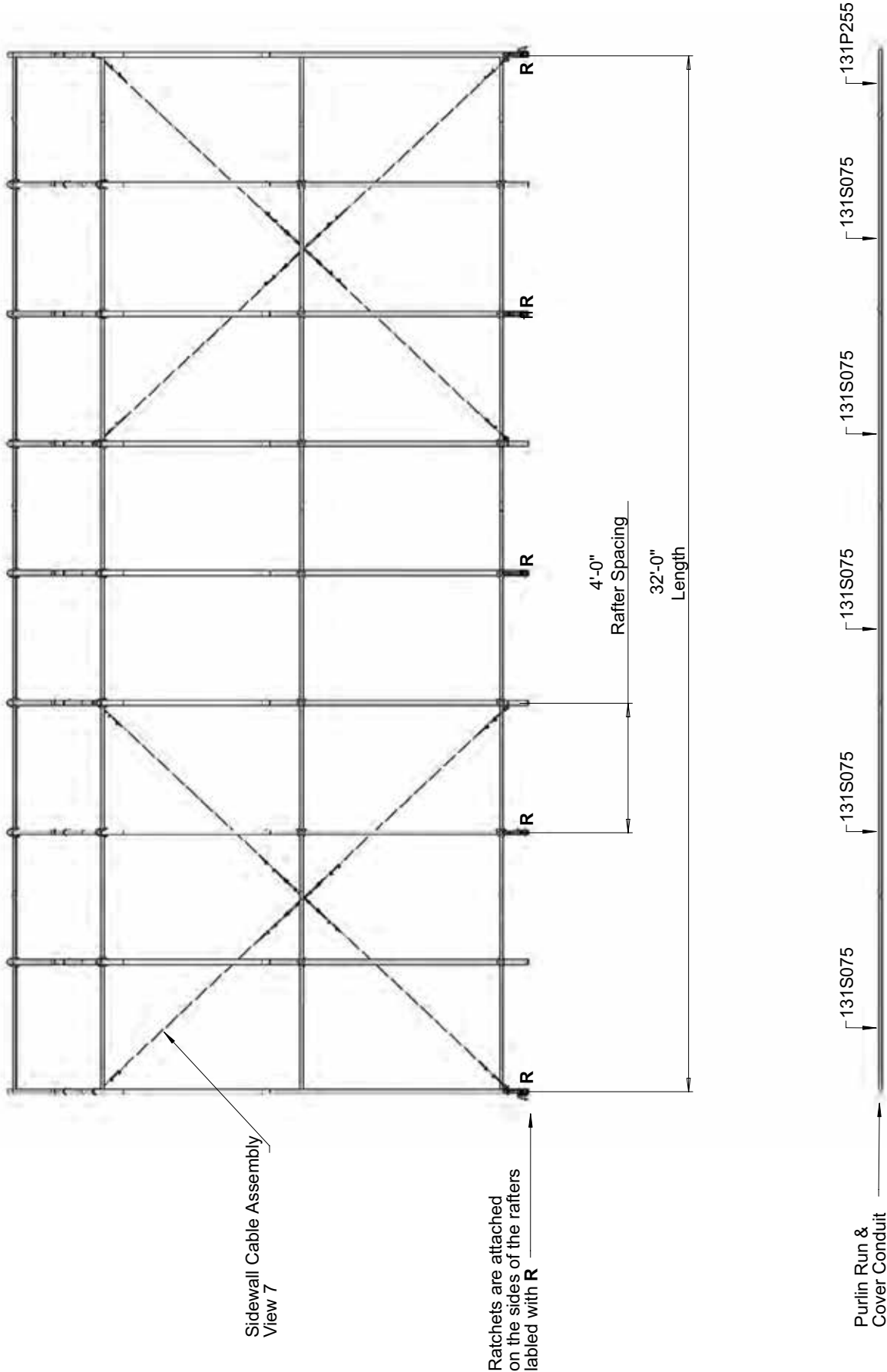
Cable Connections

Band clamps for cable connections are placed on the first and fourth rafters only. (Both ends)

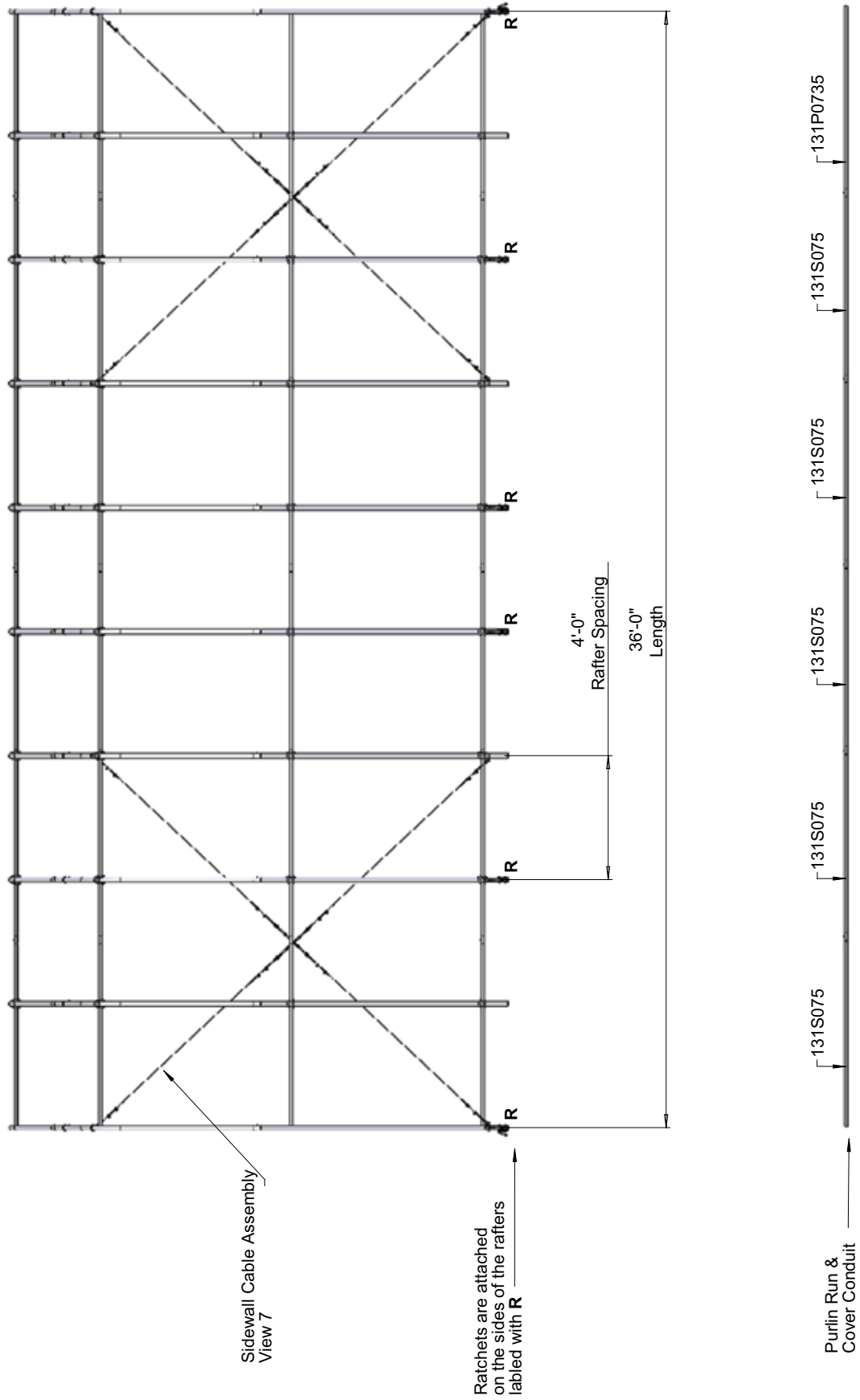


QH1061 - End & Side Ratchets
End - Secured over end panels with a tek screw. Used to tighten cover's bonnet strap.
Side - Placed on shelter sides near bottom. Secured using a tek screw. Only placed on end rafter and every other mid rafter.

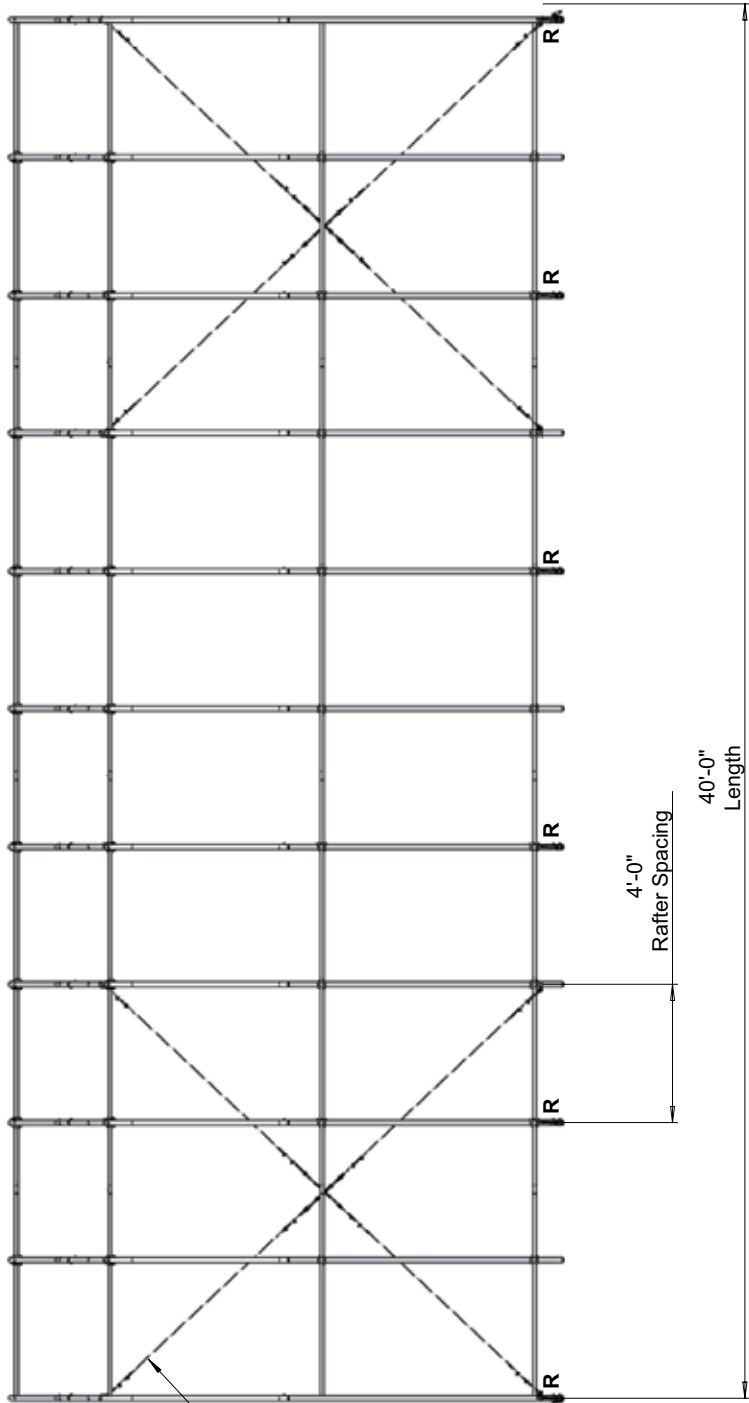
SIDE PROFILE - 105596



SIDE PROFILE - 105597



SIDE PROFILE - 105598

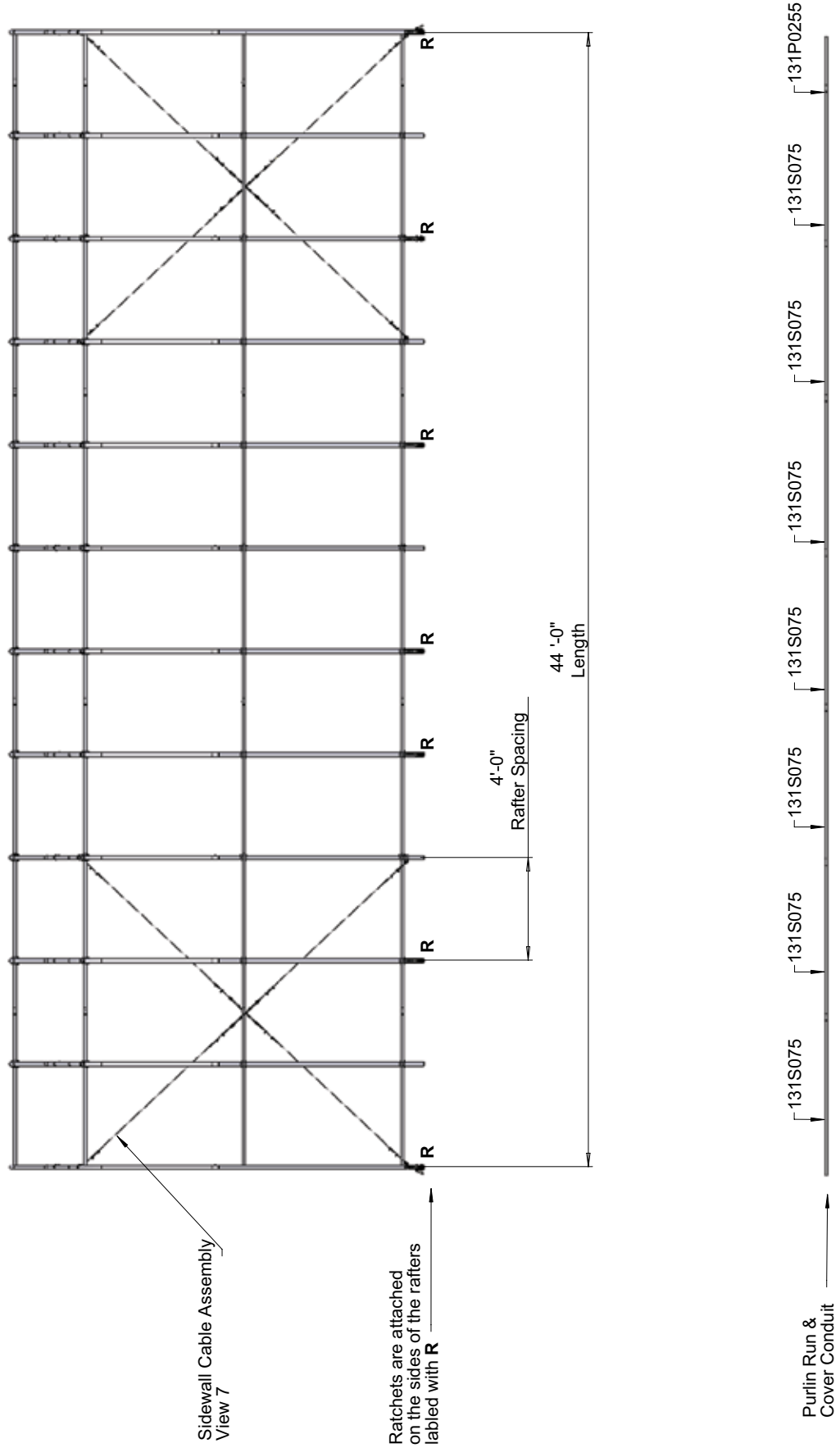


Sidewall Cable Assembly
View 7

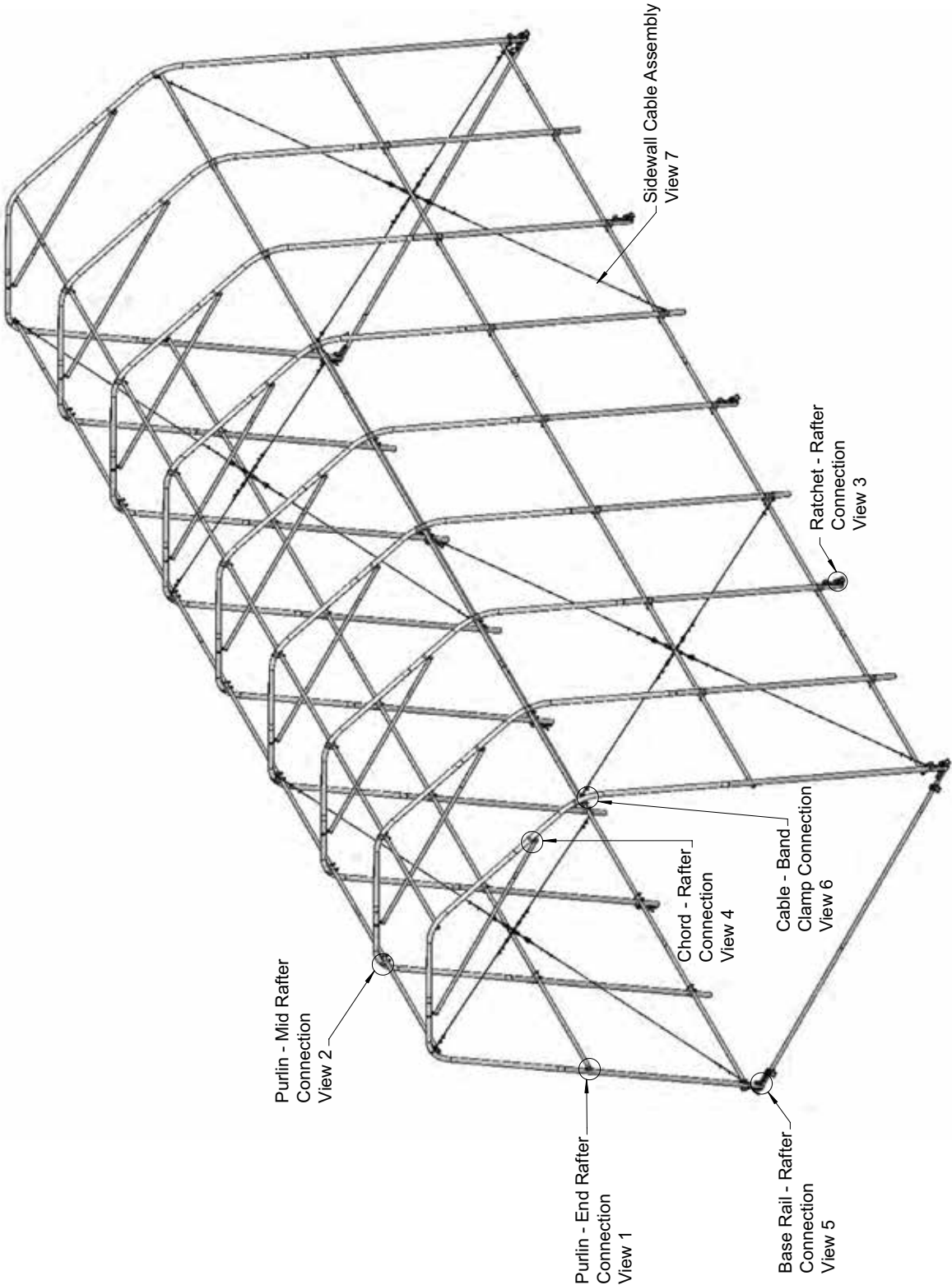
Ratchets are attached
on the sides of the rafters
labeled with **R**



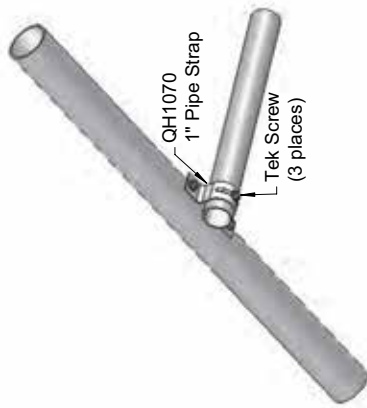
SIDE PROFILE - 105599



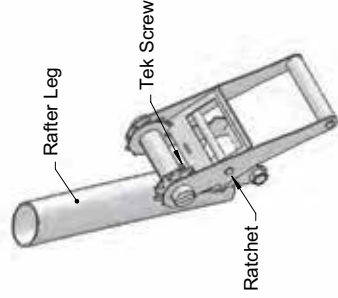
CONNECTIONS



CONNECTION - DETAILS 1-6

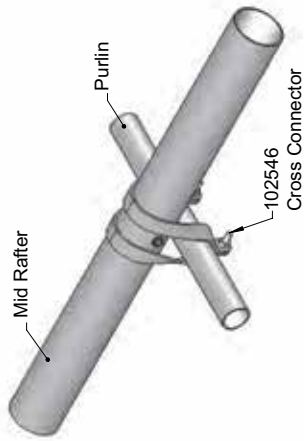


View 1
Purlin - End Rafter

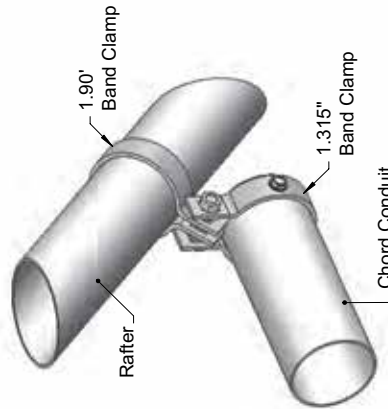


NOTE: Ratchet shown may be similar but different from actual.

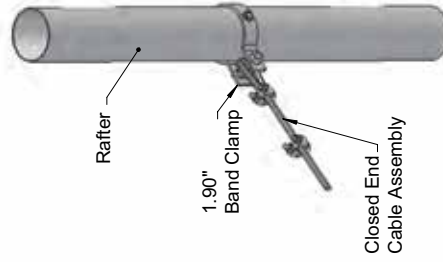
View 3
Ratchet - Rafter



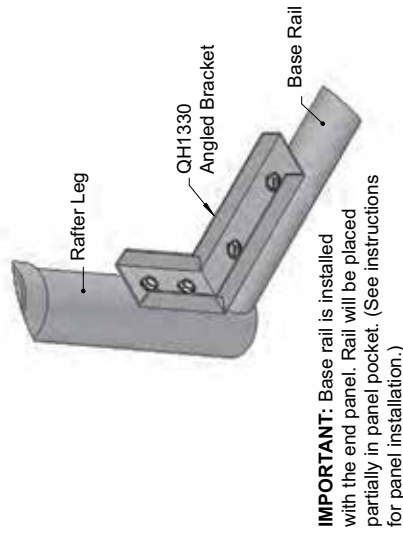
View 2
Purlin - Mid Rafter



View 4
Chord - Rafter

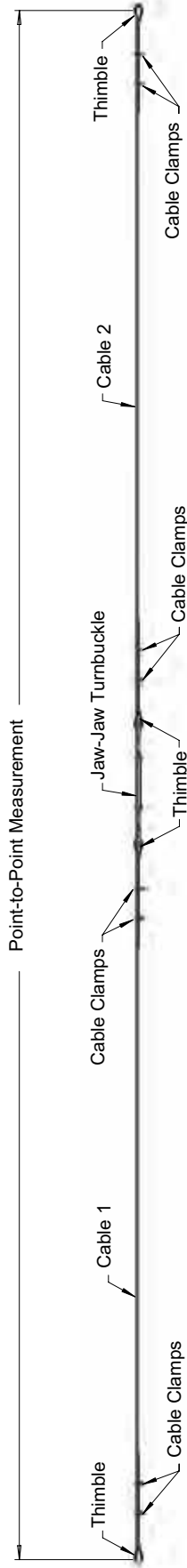


View 6
Cable - Band Clamp



View 5
Base Rail - Rafter

CONNECTION - DETAIL 7



Sidewall Cable Assembly
View 7

Cable Notes:
- Each assembly includes two cables.
- Additional cable length is required to wrap around thimbles.